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PULPIT BY GIOVANNI PISANO IN THE CATHEDRAL OF PIZA

THE AMERICAN ARCHITECT

VOL. CXV WEDNESDAY, FEBRUARY 19, 1919 NUMBER 2252

A Civic Type of War Memorial

Proposed for the City of Boston

By M. S. FRANKLIN

ALREADY there has been a general movement throughout the country to cause the memorials of the present war to take on a practical value to the community, incorporating the idea of their use as community centers, or including halls for public forums and meetings, or auditoriums that will also be available for use for dramatic and musical occasions. So far, however, the structures that have been actually proposed along these lines have been exclusively for the smaller cities and towns. Boston is, perhaps, the first of the larger American cities to shape definite plans for a structure that amplifies the "Community Center" idea to truly metropolitan proportions.

The large city, of course, must have many "Community Centers" scattered throughout its area, and the public school is coming into very general use for such purposes. The up-to-date American city, however, requires some large central structure which will fulfill similar purposes on the scale necessary for the large community. As this plan has been visualized in Boston it includes not only all the attributes usually found in the smaller community center—of course on the larger scale—but also other elements intended to make the building the educational, recreational, and social headquarters for city and state—and the actual plan has been so developed that these uses in no way detract from the dignity and character of its memorial expression.

To consider the latter first, the central feature of the plan—forming the entrance to the great Auditorium, opening on to the communicating cross Corridor of the Allies, terminating at one end in the Hall of the Army and at the other in the Hall of the Navy—is the Memorial Pantheon, reproduced at a smaller yet dignified scale from the Roman original, which is probably universally regarded as the most impressive and commanding architectural structure in the world. Located in this position, it would be visited and used daily by thousands of citizens, thus serving its purpose far better than could be the case with any isolated arch or any other purely memorial structure.

Opening from the Corridor of the Allies are

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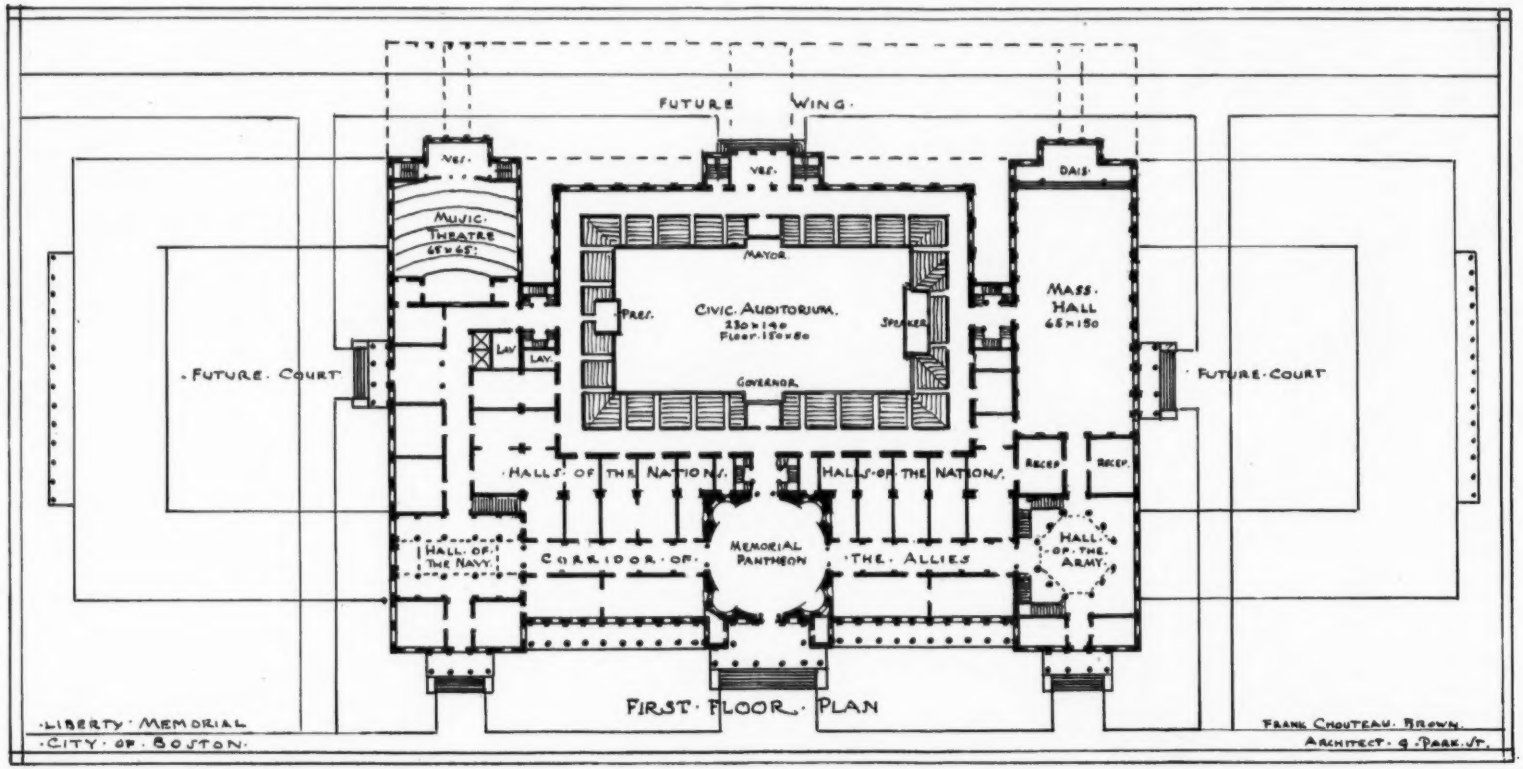
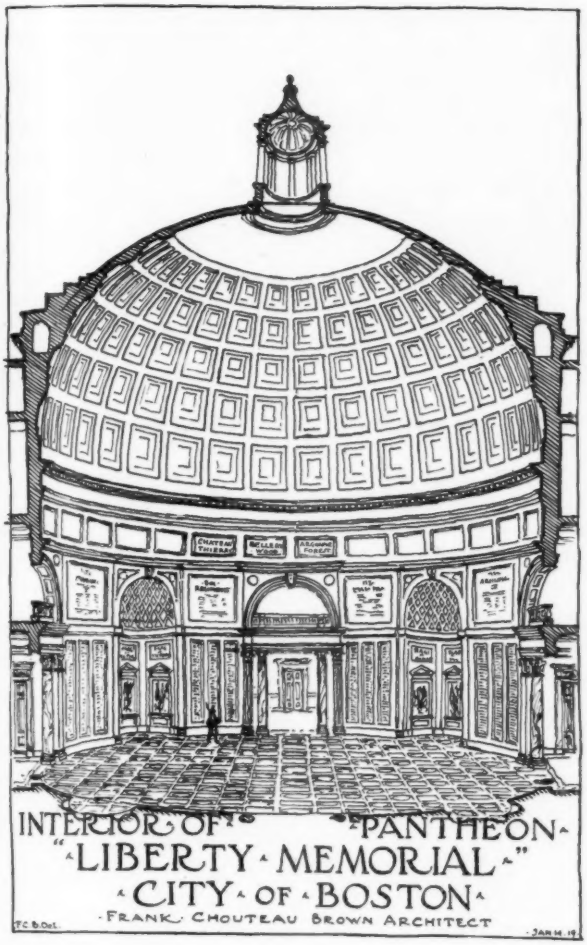

FUTURE WING
VES.
VES.
DAIS
MUSIC THEATRE 65'x65'
MAYOR
PRES.
CIVIC AUDITORIUM 230x190 Floor 150x80
SPEAKER
MASS. HALL 65x150
LAV
LAV
GOVERNOR
FUTURE COURT
FUTURE COURT
HALLS OF THE NATIONS
HALLS OF THE NATIONS
RECEP
RECEP
HALL OF THE NAVY
CORRIDOR OF
MEMORIAL PANTHEON
THE ALLIES
HALL OF THE ARMY
FIRST FLOOR PLAN
LIBERTY MEMORIAL
CITY OF BOSTON
FRANK CHOUTEAU BROWN
ARCHITECT 9 PARK ST.



rooms, lighted from above, each of which is to be allotted to a racial group of foreign-born Americans within the community, and their individual hall is to be used by them both as a meeting place and headquarters at all times, as well as for the exhibition of their national art and other features, thus providing graphic reproductions of their historic background and culture for the benefit of any visitor. The rooms will be open at all times to the general public as an educational feature, and will also serve as passages and exits from the circulatory corridor surrounding the large auditorium in the rear to the memorial corridor at the front ot the building.

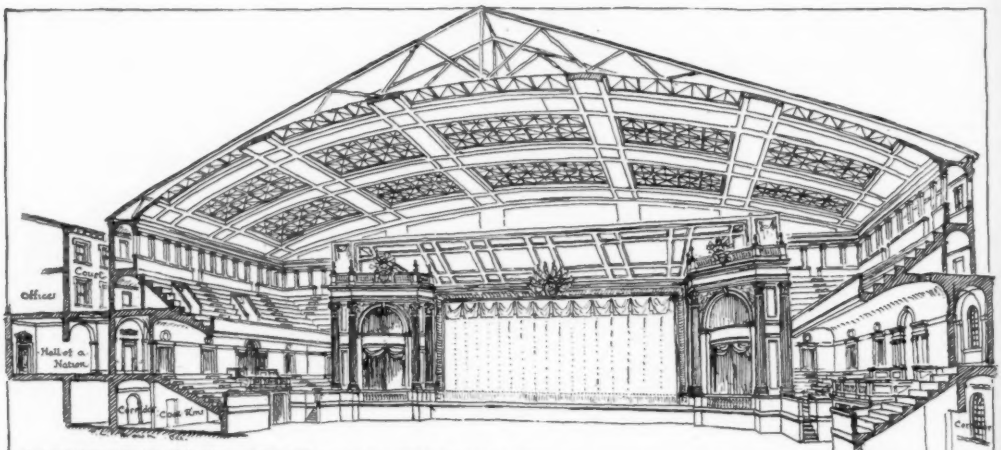
Other rooms opening from the corridor and halls at each end would provide simple yet dignified meeting places, accommodating twenty-five to three hundred people, for public committees, or for convention purposes, or for the headquarters of military and naval organizations. The wing at the right is especially intended to be used for large city receptions and other municipal gatherings, the Hall of the Army providing a dignified meeting place, and Massachusetts Hall beyond (65 by 150 ft. in size) being available for large banquets, military dances, or gatherings of the war veterans, or for convention purposes. This banquet hall communicates directly with the speaker's platform in the large Civic Auditorium, which will make it possible for the city to entertain visiting notables with a banquet in Massachusetts Hall, taking them afterwards into the Civic Auditorium, where a larger public meeting might have been arranged.

The purpose of the building is expressed on the exterior main façade by a colonnade, each column of which would represent one of the allied nations and support a figure symbolic of that nation or representing its national hero, while the frieze of the entablature would be carved with the nations' names. At the rear of the Memorial Pantheon is the large auditorium, also approached from the street at the back, which is an important thoroughfare traversed by street car lines. The auditorium has a floor 80 ft. wide by 150 ft. long, from which rise tiers of seats on all four sides, reached from outer circulatory corridors entirely surrounding the hall. A similar arrangement occurs on each floor, serving convenience of access and insulating the auditorium from outer noise, the seats being continued in a deeply pitched balcony above, ending at the back in a colannade that is carried entirely around the top of the auditorium, which is 150 by 250 ft. in size. The seating capacity of the auditorium is about 6000 people, with an opportunity for six hundred to eight hundred more to stand in the colonnaded gallery behind the balcony seats. Besides the speaker's stand at one end, opposite which is a "Presidential Box," intended for use on national occasions, there are two other permanent boxes, one for the Mayor and one for the Governor, located in the center of the auditorium on each side, connected with retiring rooms beneath by a private staircase.

The street at the rear is at a lower level, so that it is also possible to approach or empty the floor directly from a corridor on a lower story than that shown at the back of the seating tier on the principal floor plan. Some idea of the general arrangement can best be obtained from the sections appearing at each side of the view of the auditorium in

which the hydraulic stage is shown raised into place from its position in the smaller theater auditorium in the space below.

This drawing indicates the spaces available under the inclined seats which are utilized for cloak rooms, smoking rooms, dressing rooms, storage and other purposes, the relation of the outer corridors to the main memorial floor at each story, and illustrates how the spectators can enter and leave the seat locations by various levels. The auditorium staircases are arranged in four stair wells, separated both from the auditorium and the enclosing building, but available for use from both, thus making for economy in construction and safety in case of panic or fire. The entire construction, of course, would only be undertaken on the most permanent and indestructible basis, and the treatment of the auditorium itself would be simple yet dignified, adapted to supply appropriate surroundings for important civic meetings and the best acoustic results.



AUDITORIUM INTERIOR; SHOWING HYDRAULIC STAGE RAISED INTO PLACE. Frank Chouteau Brown, Architect. June 1919.
PROPOSED "LIBERTY" MEMORIAL FOR THE CITY OF BOSTON, MASS.

Such an auditorium as is here described should become an important element in the development of a city and in the lives of its future citizens. It provides a place for important conventions; for large choral entertainments and concerts, a space in which reunions or reviews of soldiers and sailors could be held, with ample room remaining for spectators. The floor, eighty by one hundred and fifty feet, could be used for dancing, for large pageants, and for many other purposes. Its level could be made to change easily so as to help sight lines for public meetings or dramatic performances. One end, including the speaker's rostrum and a portion of the floor is arranged as the roof of a huge elevator car, 90 feet wide and 40 feet deep, which can be raised above the floor level, bringing up from its position in a smaller theater auditorium beneath a completely equipped and permanently constructed stage, with proscenium, boxes and fly gallery, all ready for large operatic and dramatic performances. The seats in front of the stage when at the lower level would accommodate about fifteen hundred spectators, and while the gallery would be entered from the lower street level, the lower floor would be—as in English theaters—below the level of the street.

Situated at the rear of the left wing is a smaller music theater, similarly entered from the rear street, which, with its balcony, would seat between nine hundred and one thousand people. This auditorium could be used by singers and other soloists, and for chamber music, for Greek plays and graduation exercises. It should also be noted that all three of these elements, the auditorium, music theater and banquet hall, will help provide the material income necessary to maintain and make freer public use of the structure.

The remainder of the basement space, extending partly beneath the floor of the main auditorium, is given to swimming pools, shower baths, bowling alleys, and certain exercise rooms and courts for recreation purposes, available for the Service Club in the evenings and for students in the daytime. A restaurant is also provided in connection with the kitchen in the basement, which is also used to serve the banquets given in the large ballroom on the floor above.

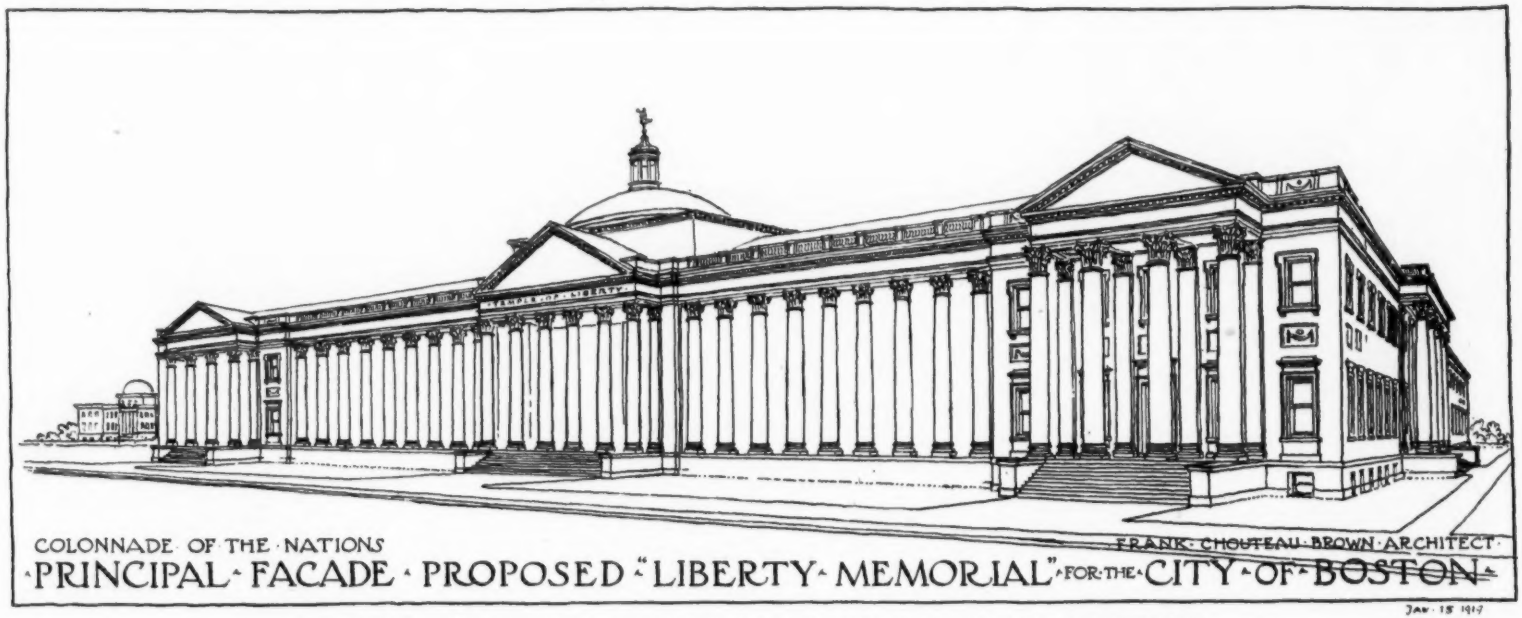
The Memorial Pantheon is actually intended for the State Memorial—being essentially a "Hall of Flags"—and it is intended to be kept entirely free

from superfluous sculpture or decoration, these adornments being relegated to the Memorial Halls of the Army and Navy, which, with the walls of the Corridor and the principal memorial rooms on the front of the building provide ample wall space for tablets, busts and other commemorative memorials. It is indeed intended that these rooms would be furnished by the friends of different military units or organizations, each room thus becoming a permanent feature of the state or city's memorial record.

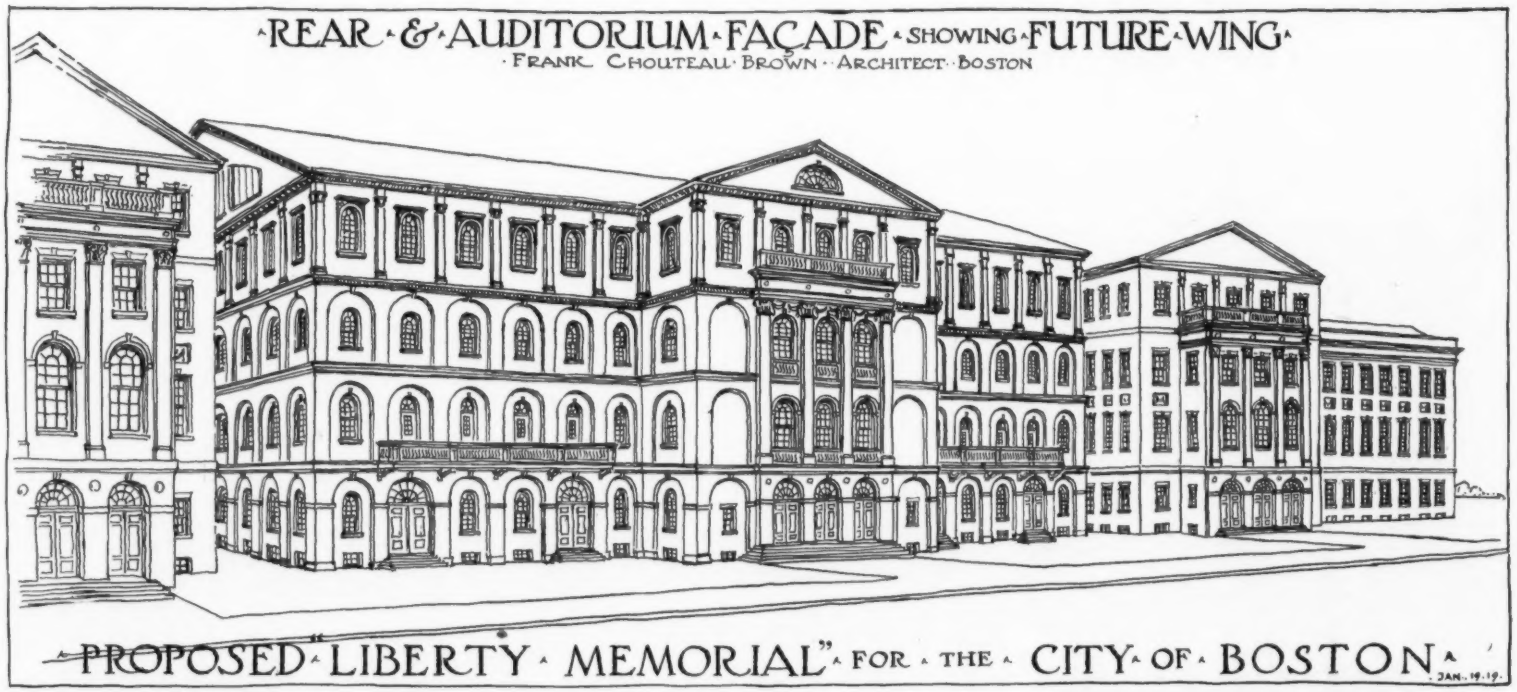
Not only could especial contributions be obtained in this way, but much of the helpful interest that would thus be raised should undoubtedly aid in obtaining public contributions to the whole Memorial structure—just as the School Committee has already expressed its willingness to contribute the half million dollars it has available in order to obtain headquarters in a building so much of which could be utilized by the School Committee between those times when the various different functions included under the one roof would not be required for other community purposes.

There are also other interests, such as the various racial groups who would accept and make use of the "Halls of the Nations," that could be counted upon to contribute directly part of the expense of providing a memorial of this kind and size. There are, besides, many business organizations which would be especially interested in a civic auditorium.

Those interested in that part of the memorial which best symbolizes the current idea of the "League of Nations" would find that expression in the harmonious colonnade of the façade, indicating the equally closely related groups of halls of the same nations which are provided on the plan of the principal floor. This floor, throughout its entire area, is intended to be maintained on a commemorative scale of simple yet dignified beauty, which could be counted upon to impress all those entering the structure, for whatever purposes they may first have come to the building.


TEMPLE OF LIBERTY
COLONNADE OF THE NATIONS
FRANK CHOUTEAU BROWN ARCHITECT
PRINCIPAL FACADE PROPOSED "LIBERTY MEMORIAL" FOR THE CITY OF BOSTON
JAN 15 1917

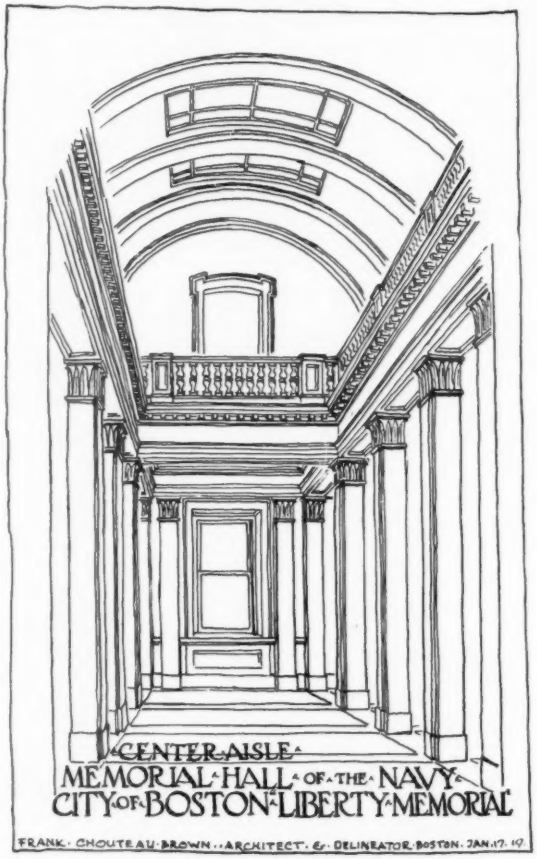
FROM THE ORIGINAL DESIGN BY FRANK CHOUTEAU BROWN, *ARCHITECT*


REAR & AUDITORIUM FAÇADE SHOWING FUTURE WING
FRANK CHOUTEAU BROWN ARCHITECT BOSTON
PROPOSED "LIBERTY MEMORIAL" FOR THE CITY OF BOSTON
JAN. 19. 19.

FROM THE ORIGINAL DESIGN BY FRANK CHOUTEAU BROWN, *ARCHITECT*

The "Halls of the Nations" should be interesting enough to draw, in the daytime, groups of school children and others into the Pantheon on their way to study this visualization of European civilization, just as in the evening they should draw to themselves the racial groups for which they would provide a headquarters, all by their very juxtaposition and inclusion in the Civic Memorial, expressive of their common part in the war and the harmonious fusion of these nations into our democratic American city organism.

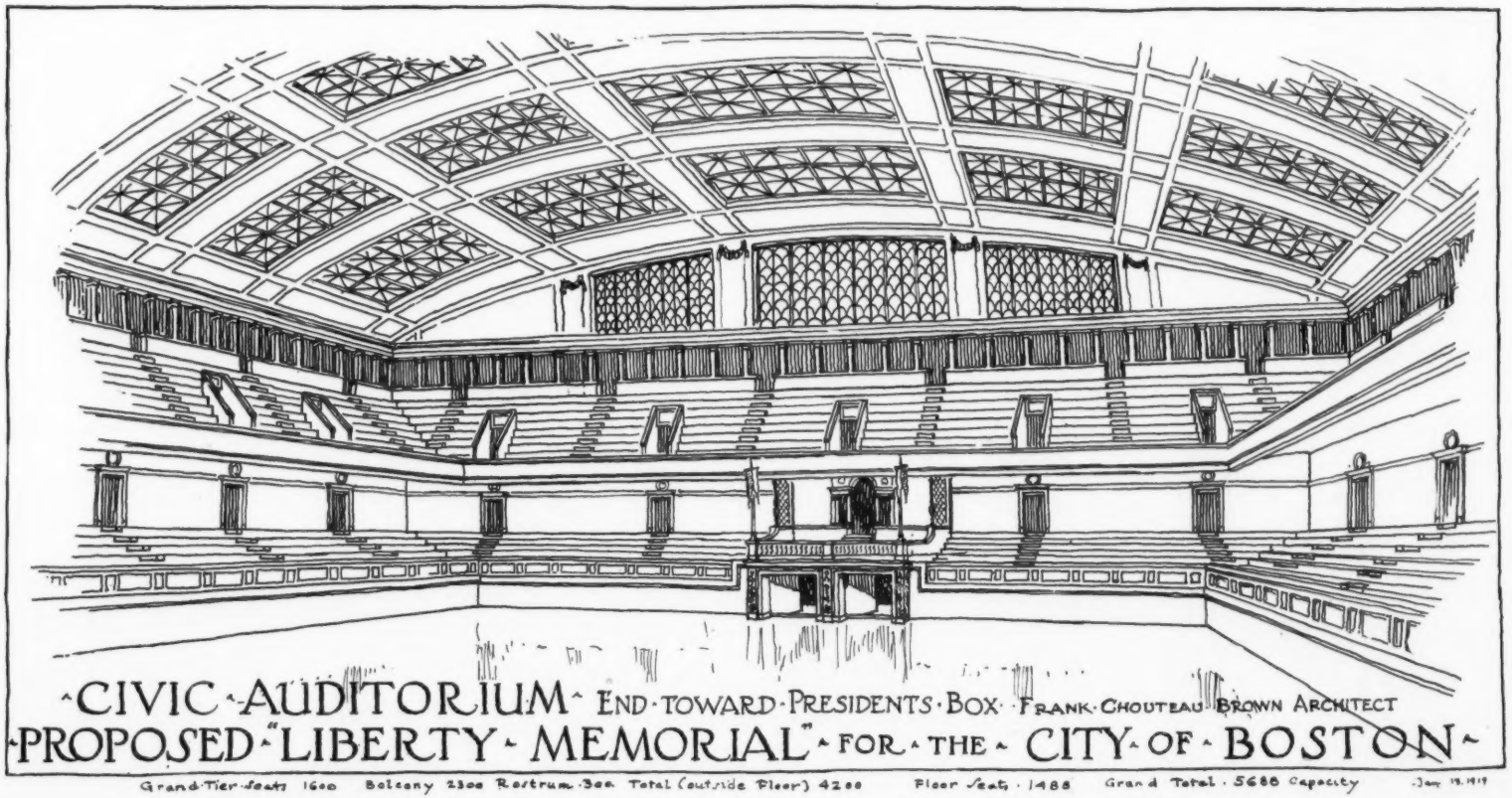
It is neither contemplated, nor is it considered as altogether desirable, that this structure should all be undertaken at one time, although it is necessary to have the complete scheme definitely in mind, a scheme so complete that it even would provide for remote future additions—so that a site originally can be provided of sufficient capacity for the extension of the building to meet the demands that always eventually arise. And, although the structure is illustrated in a reasonably complete form, it would be an entirely possible and probably the most practical thing to start out by building—as soon as a sufficient amount of funds appears to be in sight—the Memorial Pantheon, which provides the central element, and then later continue to build the two front wings, which would make the front Memorial Façade complete. This would also provide sufficient area for the school headquarters and, as the wings extending to the rear could be added later, the other interests involved could be taken care of, one after the other, leaving only the Civic Auditorium to be finally built into the court of the completed scheme. On the other hand, if the Civic Auditorium were the immediate need, that could be built following the Pantheon—or, if it was desired, in advance of any remaining portions of the structure.


CENTER AISLE
MEMORIAL HALL OF THE NAVY
CITY OF BOSTON LIBERTY MEMORIAL
FRANK CHOUTEAU BROWN ARCHITECT & DELINEATOR BOSTON JAN 17 19

Finally there remain a few words to be said about the drawings. Because of the fact that almost as soon as the scheme was presented to the architect, Mr. Frank Chouteau Brown, it became necessary to meet the ideas and suggestions of a number of individuals or organizations interested in the five or six different principal elements comprising the problem, and then arranging those ideas in a form available for quick presentation to committees and others already endeavoring to determine the type of memorial to be built in the community, it became necessary to turn almost immediately to the graphic presentation of the scheme by means of simply arranged perspectives.

Once the arrangement of the plan, the scheme for the elevation and the principal section had established the relation of the individual parts the perspectives were started, much of the detail and actual design being worked out on the perspectives and checked back to plan and elevation. In order to make the perspectives available for purposes of newspaper reproduction—and, incidentally, to simplify their rendering and reduce the amount of time necessary to their presentation to the absolute minimum—the adoption of the type of straight "line rendering" carried more or less consistently through all these illustrations was determined upon; and, that convention once adopted, it was adapted to meet the various problems encountered in the presentation of the structure as they were met from time to time.

The result is submitted for what interest of rendering or of design it may possess. At the moment the matter of a War Memorial is directly before


CIVIC AUDITORIUM END TOWARD PRESIDENTS BOX FRANK CHOUTEAU BROWN ARCHITECT
PROPOSED "LIBERTY MEMORIAL" FOR THE CITY OF BOSTON
Grand Tier Seats 1600 Balcony 2300 Rostrum 300 Total (outside Floor) 4200 Floor Seats 1488 Grand Total 5688 Capacity Jan 13 1919

FROM THE ORIGINAL DESIGN BY FRANK CHOUTEAU BROWN, *ARCHITECT*

the larger American public for consideration in one form or another. A memorial of some sort or other will be built in thousands of American towns and cities. Thus far the ideal here proposed has met with a wide and general local acceptance that seems to indicate that these plans combine to meet the wishes of nearly every element existing in one of our larger American cities. It remains for other communities to determine upon some type of memorial that will be an equally wise and judicious investment intended to aid in the maintenance and perpetuation of a future democracy in America!

An American Memorial to Theodore Roosevelt*

By GEORGE W. MAHER, *F. A. I. A., President, Illinois Chapter, American Institute of Architects*

CHICAGO is known the world over as a city typical of America. Here, perhaps, more than in any other city, all the races of the earth are blended together into a unit, a citizenship expressive of our nationality, or a democratic ideal.

Here is the universal melting pot, which is producing a new and dominant race that will express the true aspirations of America.

It is therefore fitting that the proposed memorial to be erected in Chicago to Theodore Roosevelt should typify the life and character of a man who responded in a marked degree to the virile life that is centered in this great metropolis. Therefore it should be beyond all peradventure American in inception, design and execution; otherwise it will be unworthy of Chicago and the nation.

Roosevelt has been universally termed the great American. The press in editorials throughout the length and breadth of this country, as also abroad, has unanimously accredited him this distinction.

Hence the purpose of our text: It is unfortunate that the art world in this country has not always responded or comprehended the fundamental principles that lie back of great historic events, such as, for instance, the potential significance of the world war just ended. The designs thus far produced in the majority of cases are conclusive evidence of this assertion. Too often we erect memorials and monuments, camouflaged with precedent types of architecture and sculpture, which seldom bespeak the reason for their existence or the purpose for which they have been erected.

These monuments become in time mere passing phases of interest in the eye and mind of the public and possess little intrinsic or historic value.

Above all, they portray a sterility of the creative faculty and are unworthy of the spirit and ideals of our great country.

There are many reasons that could be enumerated emphasizing the lack of understanding on the part of the public, the architect and the artist, who are responsible for such evidences of a flagrant sacrilege in the realm of art. It seems, therefore, that this national defect should be recognized and clearly understood by those who are now entrusted with the responsiblity of erecting a worthy memorial to Theodore Roosevelt.

It is an axiom that no country is really great that cannot create or possess an indigenous art and architecture, as well, indeed, as poetry, literature and music.

The difficulty in America thus far in its history is that there has been little sincere attempt to encourage the native qualities of genius in our midst, to produce a creative art, especially in the art of architecture.

There has been no insistent demand or support for it either in the educational world or in public press or magazine. There has been no propaganda for a national architecture indigenous to this country. It was said before the war that America was a country without ideals, but this assertion has been overwhelmingly disapproved. America is now recognized as the greatest idealistic nation. As a people we have been prone to lean upon the art achievements of Europe for all that we have accomplished, and indeed one of our greatest hindrances to a national art is that many of our prominent and influential artists and architects have been educated in ateliers abroad and are as a result of training and impression not in intimate touch or sympathy with American inspiration and development. This fact is evidenced by the actual work produced, notably in architecture, and travelers from abroad have repeatedly commented on this anomaly.

However, it can be stated with truth that cannot be contradicted that successful efforts pertaining to a creative building art has been produced in this country and has proved conclusively that there are

(*Continued on page 272*)

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Build Now

"THIS country is confronted with a peculiar condition," states C. H. Blackall in the course of an article contributed to the *Banker and Tradesman*. "We all feel the necessity for building and building now, but there is a curious reluctance to get started."

In view of facts that are or should be apparent to everyone who contemplates undertaking a building operation, the real cause for this tardiness is difficult to understand. Mr. Blackall in this article directs attention to the almost exact stabilization of building prices during the past ten years, and as verification gives specifically the result of bids on certain contemplated building. A project begun but abandoned in 1917 is now again under contract, and the bids received disclose that identically the same work without any change can be built at an average advance of but 10 per cent. Inasmuch as the rentals obtainable from these buildings will exceed that percentage, the operation presents a concrete example of the folly of further hesitancy.

There has been a decided rearrangement in the prices of building materials during the past two months. Steel to-day is lower in price than it was in 1898, although it still rules higher than it did in 1915, which was the period of the lowest price for many years. The same conditions affect the price of cement.

The war has taught many and valuable lessons, particularly with reference to the substitution of materials. This substitution has during the period of the war, and will for the future, work toward a decided cheapening of the total costs of buildings while in no way impairing their efficiency. In fact we have but only learned the elementary principles as to what may be accomplished by a well studied substitution of materials and their efficient use, and it is in this very interesting phase of practice that architects may be able to work out and set in motion operations that would otherwise be held in abeyance.

THE question of labor presents the only uncertain factor in building operations. No one can foretell just what the future attitude of organized labor will be. It would seem reasonable to assume that with the supply even now far in excess of the demand it will not be possible to insist on the present high scale of prices that prevailed during the war. But those who have given this matter the closest study are firmly of the belief that there will be no material reduction in wages for some time. In fact with the present ruling prices of material, the large number of unemployed, the steady increase in rentals, and the shortage occasioned by the cessation of building, there is every good reason to regard the timidity to resume building as merely temporary.

The educational work being carried forward by the Department of Labor is already bearing fruit. It must be considered that the conditions produced during the war, and which were the result of almost two years of abnormality, cannot be at once overcome. But with our increased public wealth, the fairly free supply of loaning capital, each day now more freely released, it will soon become apparent that further cautiousness is not only unwise, but that it is, as affecting the individual, poor business policy.

We have two hundred and sixty-five billion dollars of wealth. We are to-day wealthier than four of the wealthiest nations of the world combined. We have $2,500,000,000 worth of gold, the greatest amount ever in the possession of this country, and more than half the gold in the world.

WITH the war over, all danger of hostile attack from any other nation passed, we are still cautiously looking ahead, trying to pierce the veil of the future, yet, because of a certain psychological status, we are waiting, vainly hoping that prices of labor and material will be considerably reduced.

Such supercautiousness it is hard to understand. We have been as a nation known abroad as always

ready to take a "sporting chance." Such a chance presupposes a certain gamble. With all the tangible evidences of our present and future prosperity before us we now hesitate to build. In the name of common sense, why?

With the approach of the spring months we shall have reached the time when the lowest bids are generally offered. Referring to this period, Mr. Blackall states: "The contracting firms are always anxious to place their orders for the year, labor is less apt to complicate the matter and the supply of materials generally is such that prices are at a low level. Furthermore, if building initiative is postponed beyond these three months we would then be in the midst of the building boom which is sure to come before very long, when prices may advance and it may be more difficult to enlist either capital or labor."

Those who followed the often repeated injunction during the war, to plan then, should be in the very best position to build now. To defer doing so is to become unmindful of their best interests, and to be perhaps as unpatriotic by inaction as they would have been to have undertaken to evade the Government's restriction of six months ago.

An Efficiency Test

THERE are many men in the profession of architecture who have demonstrated in the most forceful way the shortsighted policy of the national Government in its relations to architecture.

For many long and wearying months these men toiled in departmental positions. Their duties of a most arduous nature, their working hours long and filled with responsibilities, they freely gave to the service of their country all they had. And this all was a measure of performance the result of years of active practice of the real profession of architecture.

The majority of the men thus employed spent but little time in the practice of their profession, as it is mistakenly understood by the general public, and also, most unfortunately, by many men in high and responsible Government positions. They were not crouched over drawing boards creating beautiful designs, evolving æsthetic details, or sitting in conferences in which the principal topic was Art.

But what they were really doing was no different, except perhaps in the magnitude of the operations, from the work they had been quietly pursuing when they set it aside to serve their country. All of these men were practicing architecture in its highest development, in its ultra-administrative phases. They were conducting investigations as to the supply and sources of material; they were devising schemes for its routing and prompt delivery. They were investigating the labor and social conditions of the vast numbers of working people who at a high speed were striving to make us fit and ready for our big task of winning the war. None of these men was compelled to serve an apprenticeship in these things. They came to their tasks master builders, master organizers, master workmen.

WHEN the fleet came out of Santiago, Admiral Evans signaled, "Steady, men, this is what we have been educated for." The architects who took up their work in Washington and at other points where the Government was conducting vast operations had been educated and perfected through long experience for just the thing they were doing. It is too early now for the profession to receive the recognition that it deserves for these services, but when the facts are known it is certain that the profession of architecture will reap the reward that is its due for its wonderfully efficient co-operation during the war.

Another class which has also helped to set public opinion straight is composed of those men who either individually or as working partners have during a period of cessation of building operations efficiently maintained their organizations at a considerable loss, so now that the time has arrived when the best interests of the Government demand a return to normal building conditions, they stand ready, fully equipped, for the work before them. Many of these firms had maintained their equipment and at the same time had relinquished for important Government work many men in their organizations.

Most of the professions have profited materially as the result of this war. There have been to them many avenues for advancement, for substantial and remunerative service. In the profession of architecture the record has been a spirit of self-sacrifice. Architects have been forced to contemplate what has been practically a ban on professional activities. That they have survived this crisis, have emerged at this time equipped to take up their work efficiently, is a triumph of the profession.

A Coming Extension of Architectural Service

IT is obvious that the successful execution of a building contract must satisfy the owner, the contractor and the architect. This condition is affected by numerous elements that enter into such an undertaking. Some of these elements have a greater influence on the contract than others, but all require careful attention.

The essential elements of the execution of a building contract are the furnishing of materials and labor by the contractor for a compensation provided by the owner. The fundamental factor of a contract is the materials, and their quantity and quality governs the extent of the labor involved. The quantity of material and its attendant labor must be correctly estimated as the basis of the contract, for no transaction which includes an error can be satisfactory or just. Error may vary in degree and importance, but if the fundamental factor is in error the whole transaction is vitally affected. Hence it follows that a satisfactory contractual relationship must be free from fundamental errors.

The plan and specification are the directions that guide the furnishing of materials and labor on the part of the contractor, subject to interpretation, and are ordinarily thought to be a sufficient basis for such a contract. The plan and specification, by line and word, only indicate the limits of each particular factor which enters into the completed whole. They cannot and they do not indicate *directly* the volume or measure of these factors. To complete the presentation of the project to the contractor, as a basis for a contract and its execution, the measure of the volume and quality of the material must be included. In other words the *complete* interpretation of the architect's conception of the building must include the plan, the specification and the measure of the materials involved.

The custom of requiring the contractor to estimate the quantities is a delegating of the architect's function of interpreting his conception of the projected building. Modern building undertakings bulk in such a degree of magnitude that individual estimates of quantities of all kinds may be made by one hundred or more persons, translating the plan into quantity according to the variable ability of the estimators. Every plan and specification requires a uniform reading and it is manifestly impossible for the architect to have a direct contact with each estimator. To conserve the architect's time and make the basis of cost estimating uniform and truly comparable necessitates the furnishing of the quantity schedules along with the plan and specification.

The cost of estimating these quantities is now paid by the contractor in the first instance, incorporated in the contract price and ultimately paid by the owner. By deducting the cost of a quantity survey from the payments to the contractor and reimbursing the surveyor, the owner's estimator instead of the contractor's estimator is paid. The ultimate cost of the project is not adversely affected and is very often cheapened by the elimination of error in quantity estimating.

In making the measure of the quantities, the surveyor in no manner interferes with the design or construction of the building nor does he encroach on any prerogative of the architect—the surveyor is simply the means of interpreting the plans and specifications in terms of materials.

In the new order of things, the elimination of waste and indefiniteness is demanded in every activity and the readjustment of routine practice will surely come about. In this case, there is no doubt but that the errors of quantity estimating on the part of the contractor and the cost of the tremendous duplication of this work, will be done away with. Being the proper function of the architect to control this work, as completing his service to the owner and the contractor, it is his duty to comply with the demand. Should he not do so, it will then inevitably be done by the owner and the architect will surrender that control which he must maintain to make his position secure. This rendering of complete architectural service cannot long be delayed.

Criticism and Comment

The Editors, THE AMERICAN ARCHITECT:

Paragraphs Nos. 1, 2, 3, 4 and 5 of the article on "The Practice of Architecture" in your issue of Nov. 27, I fully endorse. If we have had a measure of success as architects it is because we have made these principles govern our practice. Few are really successful architects unless they have governed their practice as therein set forth. The measure of an architect's success is largely governed by how nearly he follows this as outlined in the above mentioned paragraphs.

I have in my forty-five years' practice had as clients the sons, the fathers and the grandfathers, in a number of instances, by taking care of everything.

OCTAVIUS MORGAN,
of Morgan, Walls & Morgan.

Los Angeles, Cal.

An American Memorial to Theodore Roosevelt

(*Continued from page 268*)

men of vision and ability in our midst, who, if given the opportunity, can create in marble and bronze a result that is worthy of our aspirations and an honest effort to express our life.

Chicago has already produced a type of architecture which has been given more recognition abroad—in London and Paris—than near its native prairie soil which gave it birth.

This theme or type of art has not been fully developed nor yet officially recognized by our art or technical schools, but the movement is under way and is virile and is gaining momentum and recruits and will be fostered in time by the country. It will be encouraged by the masses of people who by instinct will ever call for their own.

The memorial to Theodore Roosevelt will be unworthy if it is a replica of any Greek, Roman or European model or precedent. Pericles and the Cæsars inspired the artists of their country and age and the temples and monuments erected through their inspiration typify their civilizations.

If this great American, now silent in speech, could express to us his ideals in regard to an American effort as he has upon many auspicious occasions, notably before the convention of the American Institute of Architects at Minneapolis in the year 1917, this argument would be unnecessary. His plea was for an American art and architecture.

The great public will hail with emotion and grateful appreciation a theme that is consistent with his ideals, which he proclaimed in precept and example during the extent of his useful life.

Let no man or influence divert the great spirit of his aspirations in any memorial monument to be erected to his life, otherwise it will be a false note, a discordant attempt and nonexpressive of the character and life of this great American.

Furness House, Baltimore

By EDWARD HUGHES GLIDDEN, *A. I. A.*

(*See plate section for illustration*)

FURNESS WITHY & CO., LTD., steamship owners and agents, one of the great corporations of Great Britain and Ireland, with offices located in many of the seaports of the world, decided some time since to erect their own personal office buildings in certain of the cities of this country.

The port of Baltimore was the first to be considered, and the architect was requested to design a small building which would be of a dignified and pleasing type, without being at all over-ornate or in the slightest degree bizarre. In addition they desired a building of a traditional English type.

It was decided to adopt the style shown by the accompanying photographs, and the clients have felt the type so appropriate that they have since used it in another city.

The plans of the building have little of interest, as in the lower story there is merely a corridor running from street to street, flanked with offices on either side, and the upper story is one large skylit counting room with private offices at the east end. The plans and details have therefore not been reproduced.

As to the exterior, which is of red brick and limestone, the relative proportions of the fronts were determined to a greater or lesser degree by the existence of old pile foundations which could not be removed and replaced without great delay, owing to the lack of labor caused by the war.

A greater projection of the central feature in each front would have probably been advisable.

The carved ornament of the east front was purposely executed in higher relief than that of the west by reason of the fact that a large building throws its shadow over the east façade throughout the morning with the exception of a period of about an hour.

A greater freedom was used in the design of the west front than in that of the east, and it is questionable if the results are as good.

The private office of the manager of the Baltimore division is shown. This is a simple room, but it is unfortunate that the furniture and lighting fixtures were not selected in better accord with the small amount of decoration and that the trim of the room was not painted rather than executed in mahogany. The distortion caused by the wide angle lens of the camera of course does not exist.

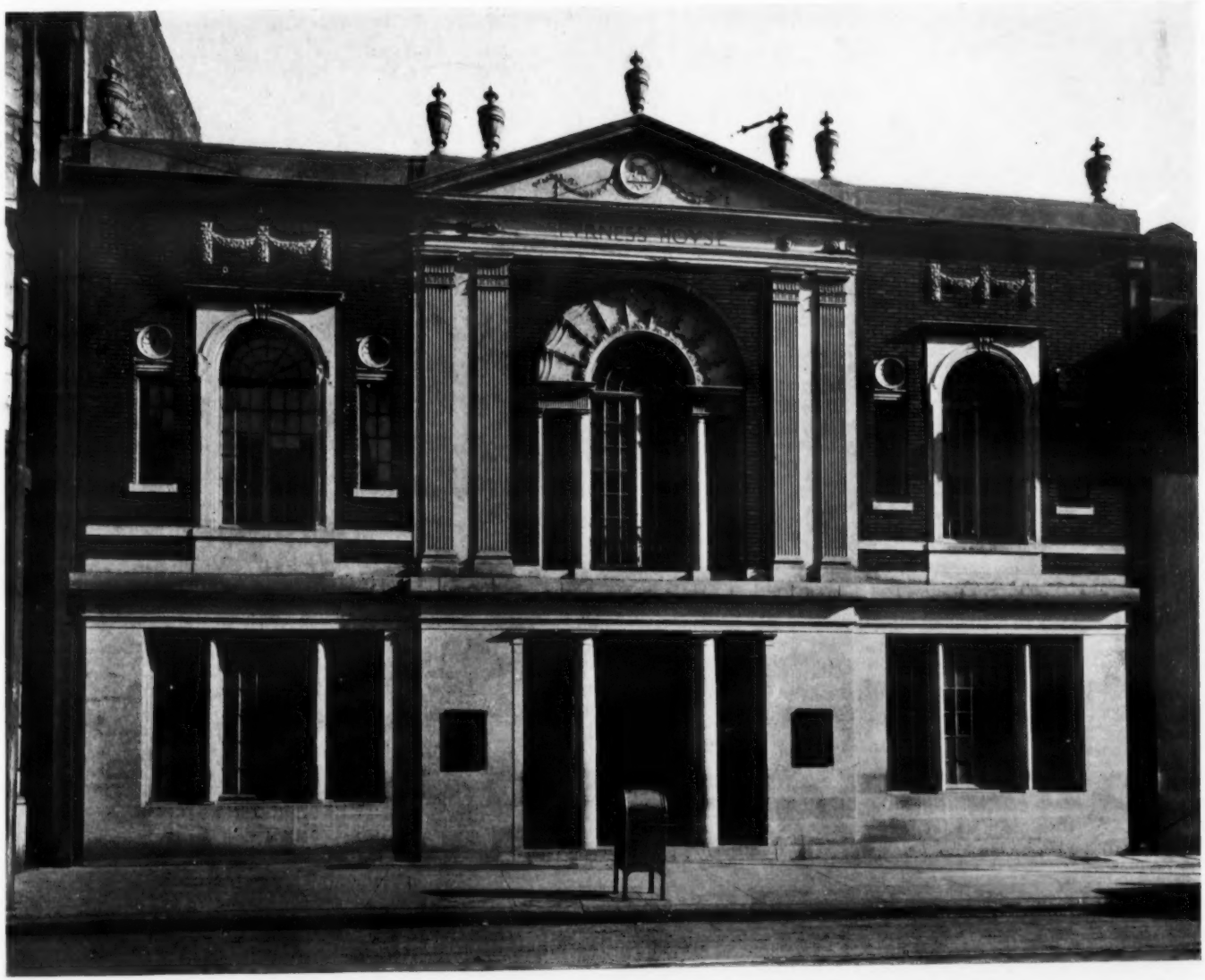


PLATE 56 "FURNESS HOUSE," BALTIMORE, MD., OFFICES OF FURNESS, WITHEY & CO., LTD.,
EDWARD HUGHES GLIDDEN, *ARCHITECT*

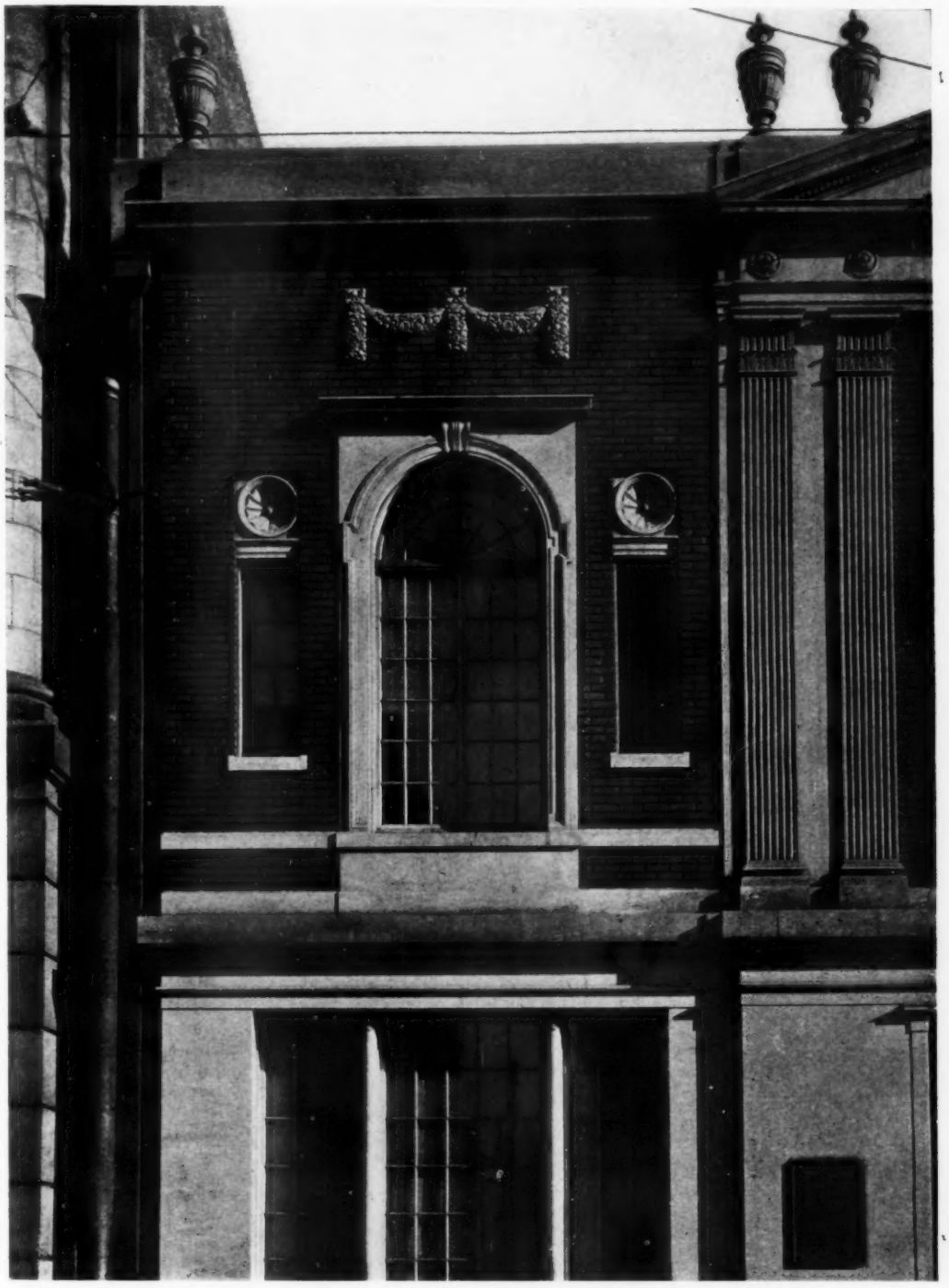


PLATE 57

"FURNESS HOUSE," BALTIMORE, MD., OFFICES OF FURNESS, WITHEY & CO., LTD.

EDWARD HUGHES GLIDDEN, *ARCHITECT*

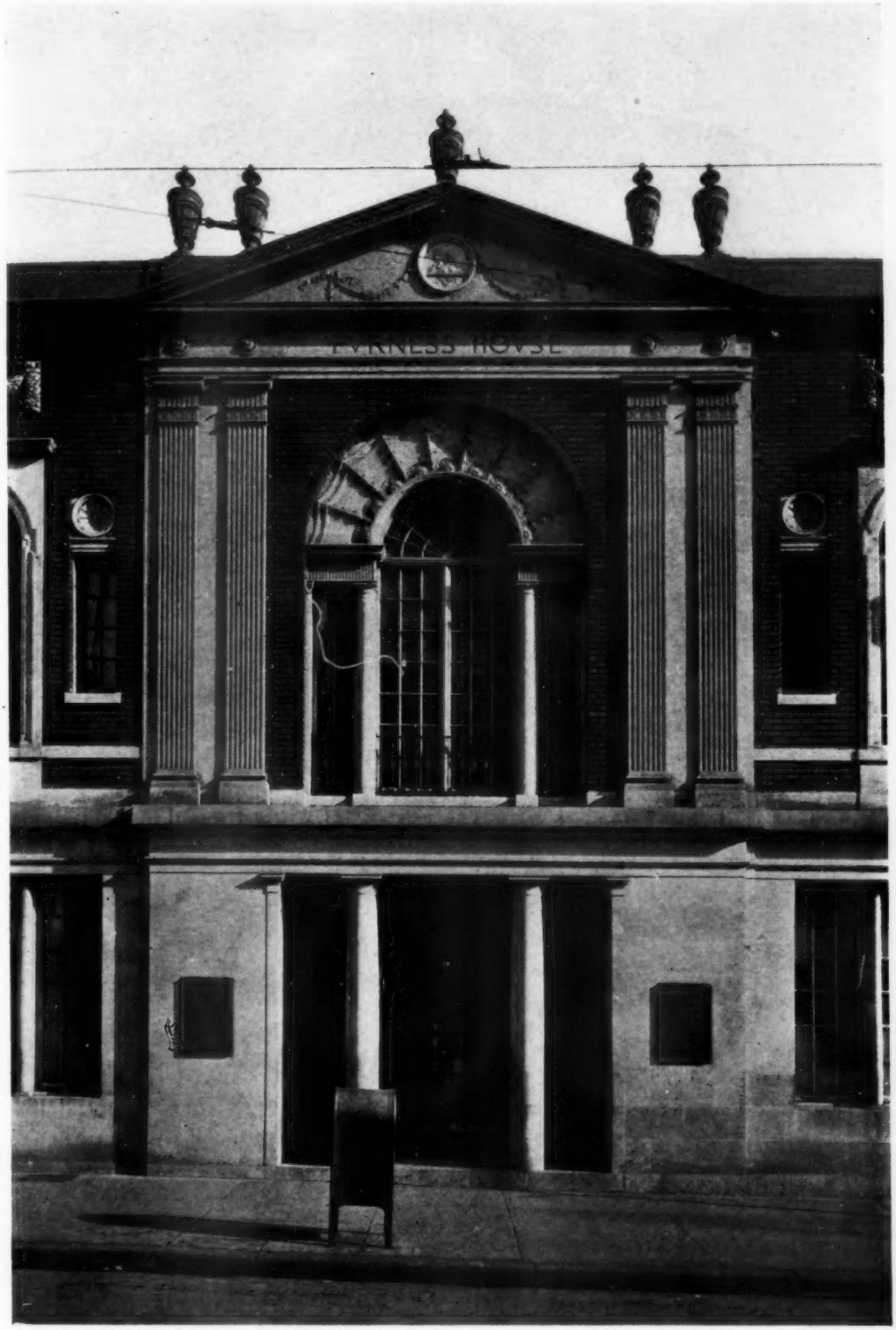


PLATE 58

"FURNESS HOUSE," BALTIMORE, MD., OFFICES OF FURNESS, WITHEY & CO., LTD.

EDWARD HUGHES GLIDDEN, *ARCHITECT*

PLATE 59

"FURNESS HOUSE," BALTIMORE, MD., OFFICES OF FURNESS, WITHEY & CO., LTD.

EDWARD HUGHES GLIDDEN, *ARCHITECT*

PLATE 60

HOUSE OF DR. ROBERT FAGIN, MEMPHIS, TENN.

JONES & FURBRINGER, *ARCHITECTS*

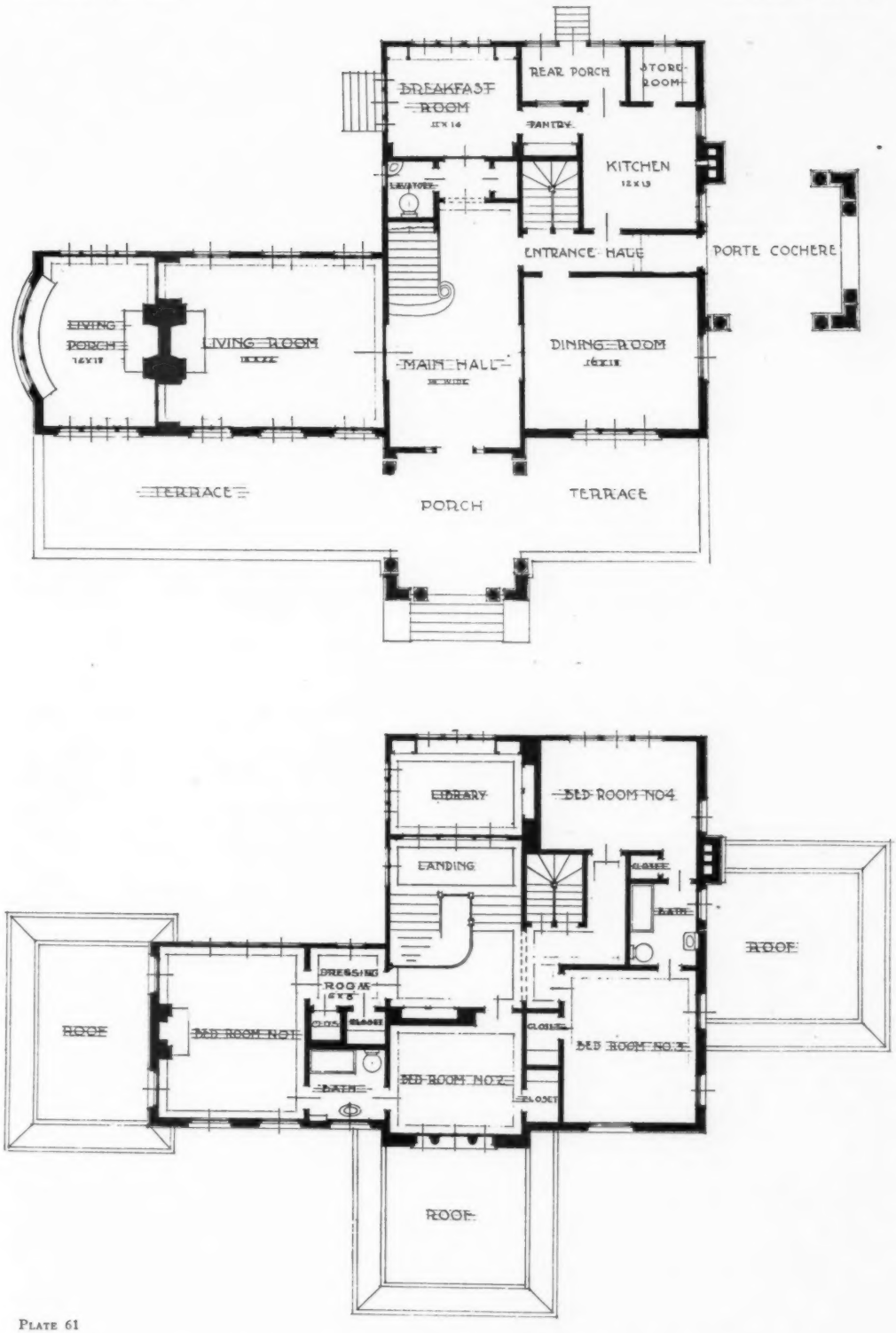


PLATE 61

HOUSE OF DR. ROBERT FAGIN, MEMPHIS, TENN.

JONES & FURBRINGER, *ARCHITECTS*

VOL. CXV, NO. 2252 FEBRUARY 19, 1919

LIVING ROOM

PLATE 62 MAIN HALL

HOUSE OF DR. ROBERT FAGIN, MEMPHIS, TENN.

JONES & FURBRINGER, *ARCHITECTS*

Financial and Commercial Digest

As Affecting the Practice of Architecture

Construction Codes for Safety Uniformity

To effect a similarity of safety codes so that construction interests may not be so hampered in their work, a plan which includes a tentative list of codes in no less than fifty-five lines, is being formulated by the Department of Labor working in co-operation with the Bureau of Standards. It is the idea of the two departments to draft codes covering all trades in order that injury to employees and economic loss to the nation may both be prevented as far as possible. One of the safety codes will deal with construction, including demolition work, retaining walls, masonry, concrete and steel ladders, stairways, runways; another code will deal with elevators, escalators, in which particular attention will be paid to shaftways, counterweights, guide rails, landings, cars, safety device controls and signals.

Codes already drawn up by states and private institutions will be carefully examined and the best features of each will be incorporated in the new codes. Some of the other subjects to be considered call for the investigation of plant arrangement as might affect the routing of materials, the design of the buildings, clearances and illumination, also fire hazards, the spacing between buildings, and material as relating to the occupancy of the buildings.

Plan Solves Dust and Fumes Problem

Dust and fumes, which have always presented a perplexing industrial problem, are the subject of an article by William H. Easton of the Westinghouse Company in *Industrial Management*, in which he shows how to make these injurious substances useful by merely pressing a button. In Mr. Easton's electrostatic process the dust particles are charged with electricity so that they fly to the sides of a tube oppositely charged and cling there until dislodged by jarring. Thus valuable material that otherwise would be lost is saved, and according to Mr. Easton a smelting company collected copper-dust in this way which netted the firm $180,000 a year more than the cost of its precipitating plant.

The electrostatic method of dust precipitation embodies an old underlying principle, that of rubbing a rubber comb against a woolen garment, and the comb becoming electrified can attract and hold scraps of paper or other small particles. A treater for precipitating the dust consists of two large horizontal pipes connected by means of a large number of small vertical tubes, inside of which hang fine wire, which is charged by means of direct current to a potential of from 50,000 to 100,000 volts. The tubes are grounded so that a strong electrostatic field exists inside the tubes.

War Boomed Building

The monetary value of the war boom in building and engineering operations in the nation is shown in statistics compiled and set forth in a recent bank statement. Contracts aggregating $1,689,242,000 were awarded in 1918, the largest amount on record. Thirty-two per cent of this sum is represented by Government work. The contracts were let in twenty-five States.

Public Contracts Executed in Year

Expenditures for work performed under the supervision of the Bureau of Yards and Docks during the fiscal year 1918 totaled $193,164,458.24, according to the report of C. W. Parks, chief of bureau. Six hundred and eighty-two public works contracts were executed during the year. Since July 1 of last year 224 public works contracts were executed.

For the fiscal years 1917, 1918 and 1919 to date, there has been appropriated for work over which this bureau has cognizance a total of $263,446,575.53. Of this amount $27,509,000 was for maintenance and contingent expenses of yards and stations and $235,937,576.53 for public works. To date, out of the total amount appropriated, there is unobligated $35,814,709.80.

Plan Model Farm Dwellings

The Department of Agriculture has developed plans for model structures to help meet the demand for tenant farm homes. It is believed by the department that better houses and an offer of permanent employment are needed to get large numbers of men to work on farms.

Steel Orders Smallest Since October, 1915

A decline of 694,884 tons in unfilled orders for January is reported by the United States Steel Corporation. The total on Jan. 31 was 6,684,268 tons, the smallest since Oct. 31, 1915, when 6,165,000 tons were reported. A shrinkage which the industry considers as emphasizing the slackening of commercial purchases of steel after the armistice was signed caused the decline of advance business in December and January together of more than 1,400,000 tons.

The current bookings compare with 12,183,083 tons on April 30, 1917, the maximum total reported by the corporation, with 11,474,054 tons on Jan. 31, 1917, and 9,477,853 tons on Jan. 31 last year. From Jan. 31, 1917, to the end of August that year orders on hand did not fall below 10,400,000 tons at any time and were not below 8,000,000 tons last year in any month except December.

While new orders have fallen away rapidly since Dec. 1 last the corporation's mills have been working above 75 per cent of capacity, with some around 85 per cent, according to estimates heard in the trade. The output has been partly for customers who have specified against contracts placed prior to the absorption of production by the Government and also for the corporation's warehouses. It is estimated that between 25 and 30 per cent of current production is going into stocks which were greatly depleted during the period when war demands were requiring almost all the mill outturn.

Improved Roads and Congress

Of the many measures before Congress to improve highways and create a national interstate system, two have the backing of the Administration, having been formally approved by the Secretary of Agriculture. The first, introduced by Senator Bankhead, who fathered the present Goods Roads Act, would amend that law by making available, in addition to funds already appropriated, $600,000,000, to be expended over a period of seven years. The second, presented by Senator Swanson, directs the Postmaster General to set aside, at the end of each fiscal year, 60 per cent of the net proceeds derived from the operation of motor trucks engaged in carrying parcel post. This money would be used in repair work on the roads where the trucks travel.

Senator Chamberlain, chairman of the Committee on Military Affairs, is the author of another measure that outlines a plan for an initial appropriation of $100,000,000 to establish and develop a system of military roads under military control. The Secretary of Agriculture, under another plan, can lay out national highways that meet all needs, and he can use the Good Roads Act to put it into effect.

Co-operation Against Fire Loss

In view of the fact that in ten months of 1918, with the United States at war, the fire loss was greater by a hundred million dollars than in the corresponding period of 1916, the major part of which was strictly preventable, the resolutions recently adopted by the committee on co-operation with the National Board of Fire Underwriters of the Fire Marshals' Association of North America, are of particular import. The committee advocated, among other things, compulsory fire prevention education in schools; the adoption of uniform records, greater fire protection for Federal, State and municipal buildings which house priceless historic records and documents; the adoption of the recommendations resulting from the municipal surveys of the National Board engineers and the acceptance of the offer of the New York City Fire College to extend the privileges of this institution to the firemen of other states.

British Architects Exhibit American Timber

As a step in the British reconstruction program, the first exhibition of American timber in England has just been held under the direction of the Royal Institution of British Architects. Housing forms a big part in the British reconstruction plan, and many enterprises are projected in which timber will be required to a large extent. The exhibit was prepared through the assistance of American Trade Commissioner J. W. Walker.

Collecting War Medals and Relics

A collection of material relating to the world war which will form one of the most important ever shown, is now being assembled for the United States National Museum at Washington. The purpose is to preserve and exhibit a series of objects vividly illustrating the military and naval activities of all countries engaged in the war. The collection will consist of commemorative medals, military and naval service insignia, mementos and relics of special note gathered during the war.

Current News

Cady Architectural Library Goes to Trinity College

Mr. J. Cleveland Cady, for many years senior member of the firm of Cady & Gregory of Hartford, Conn., has presented to the Trinity College Library his valuable collection of books. Some 375 volumes and nearly 2000 photographs are included in the collection which Mr. Cady assembled at great expense and over a period of forty years. The library is notable for its completeness and wide scope of subjects and is considered one of the most important gifts ever received by the college.

Among the handsomely bound volumes in the collection are Fletcher's "Andrew Palladio and His Works," Pugin's "Specimens of Gothic Architecture," Street's "Gothic Architecture in Spain," Hill's "Organ Cases and Organs of the Middle Ages and the Renaissance," Gotch's "Architecture of the Renaissance in England," Brindly and Weatherby's "Ancient Sepulchral Monuments," Viollet Le Duc's "Dictionaire de l'Architecture," Uhde's "Baudenkmaler in Gross Britanien," Stuart and Revett's "Les Antiquites d'Athenes," and Revol's "Architecture of the Renaissance in England." A series of books on Colonial architecture in this country includes some of the best known volumes on the subject, which could be duplicated, if at all, only at great expense.

The collection of photographs is also unique and extensive and includes selections made by Mr. Cady because of some peculiar excellence, eliminating any prints that might be insignificant or commonplace. Cathedrals as well as parish churches of England, France, Italy and Spain are included in the number, as are noteworthy cottages of England and chateaux of France.

Mr. Cady has not been actively identified with the profession for the past several years, but is perhaps best remembered for his designing of the Metropolitan Opera House and the American Museum of Natural History in New York, some fifteen buildings at Yale University and a smaller number at Williams, Wesleyan and Trinity.

Ask for New Naval Medal Designs

Secretary of the Navy Daniels has directed Rear-Admiral Victor Blue, chief of the Bureau of Navigation, to ask a number of artists to prepare new designs for naval distinguished service medals or crosses, the ones submitted by the Artists' Association having been rejected. Secretary Daniels has announced that he would wait until a satisfactory design could be obtained, and indicated that he might make public the citations upon which awards will be based before the decorations themselves were ready for distribution.

The Artists' Association had protested against the decoration adopted by the army.

Short Notes of News Interest

A Federal Victory Building is proposed by the Springfield, Mass., Citizens' Improvement League for housing the post office, custom house, federal land bank, and federal district court, with various supplementary offices. The design of the building includes a war memorial symbolic of the heroic victory achieved by our forces. This memorial feature is in the grand stairway and fore-hall of the district federal court, where naturalizations will be held, thus constituting appeal to patriotism for new made citizens. The principal façade also has panels giving titles of the battles of the war engaged in by the 104th Regiment.

Twenty-five million dollars will be invested in private building enterprises in Cleveland, Ohio, during the present year, in addition to approximately $80,000,000 in public improvements, Building Commissioner Cunningham has estimated. He further estimated 3000 new homes will be constructed.

Agreement to launch immediately all possible construction of public improvements and to urge private activities of a similar nature, notwithstanding existing high prices for materials, has been reached by Governor Cox of Ohio, mayors, county commissioners and other public officials.

Representative Clarence B. Miller of Minnesota has made a strong appeal for favorable action on his bill for the appropriation of $1,150,000 for the construction of a public building in Duluth. It is proposed that the building house not only the post office and federal courts, but the land office, the steamboat inspection office and the Indian office.

One of the most serious problems now confronting the city of Sacramento, Cal., is the proper housing of people establishing their homes there. This point has been brought out fully in a report just prepared by the housing committee of the Consolidated Chamber of Commerce.

Would Create State Board of Architecture

A bill which has for its purpose the creation of a state board of architecture has been introduced before the West Virginia legislature by Senator H. W. Harmer of Clarksburg. The measure is now before the judiciary committee of the senate for consideration.

The bill provides that within sixty days after its passage, the governor shall appoint five persons, who must be, at the time of their appointments, architects residing in the state, and who have been engaged in the practice of their profession for at least five years. These men shall constitute the West Virginia Board of Architecture, two of whom shall be appointed for one year and three for two years.

The measure also provides that the board shall adopt all necessary regulations and by-laws to govern its proceedings and rules and regulations for the examination and registration of applicants desiring to practice architecture in accordance with the provisions of the act.

May Make Contracts Public

War contractors in every industry are affected by the announcement of the War Department that it has ordered the revocation of the clause or clauses in its contract prohibiting the publication in respect to such contracts. Contractors are therefore authorized and permitted to furnish the public information concerning War Department contracts and orders received by them.

Commission Appointed to Study Farm Conditions Abroad

A commission of ten members of the Agricultural Reconstruction Committee of the National Board of Farm Organizations has been appointed to visit Europe, to study conditions and represent the association at the peace conference. A program is being worked out by the committee studying reconstruction based on the fundamental principle affecting labor and capital. It is of special significance to builders because agricultural prosperity is a barometer of general business prosperity and because this year promises special activity in the field of farm construction.

The great farming sections have increased considerably in wealth during the past year as is shown by the remarkable totals of crop values during the past two years. The figures, which show a per cent change up to as high as plus 60 per cent for wheat for 1918 over 1917, indicate that the money returned to the great farming sections of the middle west and south from the bumper crops surpasses all previous records. In fact all of the chief agricultural sections of the country give an impetus to building and construction work as well as to general business activity. Good business can be expected by contractors and builders in farming regions especially and they must be prepared to take care of whatever opportunities arise.

England's War Memorials on Large Scale

If plans so far made can be taken as an indication of the general program, war memorials in England will take the form largely of spacious buildings. The most ambitious project yet proposed is that of the Veterans' Association, which is planning a building of 1000 bedrooms and a convalescent home for discharged men. At least £1,000,000 will be required to carry out the project on adequate preliminary lines. Another important plan calls for an "Overseas Memorial," a vast hotel for use of all men and women from overseas possessions. It will be built in the heart of London. Glasgow University purposes to erect a chapel on the west side of its present buildings.

The Leys School Memorial Fund now exceeds £32,000, on which a first charge of £20,000 has been laid for the foundation of entrance and leaving scholarships in memory of those who have fallen in the war. It is now proposed to secure additional support to provide for the erection of a memorial hall in honor of the part played in the war by the old boys of Leys. Designs for the hall have already been drawn by Sir Aston Webb. It would front on Trumpington Road and would be a striking architectural landmark on the entrance into Cambridge.

Plan Monument to America's Womanhood

A movement to erect in Washington a monument to "American womanhood in commemoration of her loyalty, sacrifices and devotion to the American expeditionary forces" has been started by the Third American Army. Letters suggesting the idea were written recently to all the commanding officers of the Third Army by Colonel E. St. J. Grebel, Jr., commanding the Seventy-sixth Field Artillery. It

is proposed that General Pershing appoint a committee to take up the work and that only members of the American Expeditionary forces, the navy and the merchant marine be permitted to contribute to the fund, enlisted men giving $1 and officers $3 each.

New Orleans Architects Elect Officers

At the annual meeting of the Louisiana Chapter of the American Institute of Architects, recently held, the following officers for the year were elected: M. H. Goldstein, president; Leon C. Weiss, vice-president; William R. Burk, secretary, and Victor Wogan, treasurer. Resolutions were adopted on the death of Samuel Labouisse.

New Chapter of Engineers Elects Officers

Over one hundred and fifty members have been enrolled in the new St. Louis chapter of the American Association of Engineers. The following officers have been elected:

Lef Winship, president; F. L. Flynt, first vice-president; C. G. Harrington, second vice-president; R. B. Kerr, secretary; Geo. Grimm, Jr., assistant secretary; C. P. Calvert, treasurer. Directors: J. F. Peters, W. E. Playter, E. F. Collins, Prof. E. J. McCaustland, University of Missouri; L. T. Maenner, H. L. Hopper.

New York City's Waterfront

New York has 578 miles of waterfront, of which 450 miles are available for pier construction. The harbor is far superior to that of London or Liverpool. The Thames is a brook beside the Hudson, and requires constant dredging. Liverpool has a tide of 30 feet range, with enormous watergate construction required to overcome it, while New York Harbor is practically tide free. In so far as docking space is concerned, New York can expand her harbor to a capacity equalling the combined dockage space of any five of the main ports of Europe.

On the Manhattan shore of North River, between Thirty-sixth and Thirty-ninth streets, the city has begun the construction of a series of gigantic piers for modern leviathans. These piers are 1,050 feet long, with slips 350 feet wide, having a depth of 44 feet at mean low water.

England's Housing Appropriation $600,000,000

To take care of housing conditions for a period of three years after the war England will spend over $600,000,000 on new houses. The state will also meet 75 per cent of the loss due to expected fall in material prices and labor during the coming years. This means a national contribution of about $188,000,000 and a local contribution of about $47,000,000. Incidentally, England will insist that the standards of construction be raised and that the work of demolishing the slum sections of the larger communities continue to be done away with.

The density of the house building will be governed by town planning schemes, fixing twelve houses to the acre in towns and eight to the acre in cities. Land purchase, house building and local transit will be taken care of together. The housing policy of England is an integral part of the town planning policy, according to Thomas Adams, town planning adviser and Commissioner of Conservation, Ottawa, Canada, who writes that it is "recognized as a result of long experience that you cannot deal successfully with housing unless you deal at the same time with the proper and economic development of the land—which is town planning.

"Good housing connotes adequate light and air, restriction of density on the building lot, improvement of sanitation and street surfaces around the dwelling, healthy and agreeable environment, and all these things can only be secured by proper planning of the land, and not by mere planning of the dwelling itself. A good housing policy as far as reconstruction is concerned means therefore one which takes care of building the houses, planning the sites, planning and constructing the local improvements, and dealing with questions of local transit. You must deal with all these questions simultaneously, if you are to make new housing measures successful. The United States Steel Corporation and other companies recognize that by buying and planning whole town sites for housing their employees. But there must also be a simultaneous policy of improving the dwellings that exist and a courageous policy of demolishing those that are unhealthy.

"You cannot deal with the housing problem by public enterprise unless you control the land and local means of transportation. It is even more important to buy the land and provide it with local improvements and transit, under a proper town planning scheme, than to build the houses. The latter is the field that can be best left to private enterprise, and $1 spent on land and land development goes as far as $7 spent on building."

Big Lumber Demand Arises in London

The possibility of a large lumber export business in the near future to take care of a sudden demand rising in England is the report from manufacturers and dealers in the Chicago district, who hope to supply a large portion of the demand from the middle west.

According to reports from England, the housing of the transient or floating population made up of soldiers and sailors on leave, is one of the chief factors which is causing concern to the English authorities. Hundreds of thousands of people have been attracted to London by positions in connection with the huge demobilization program of Great Britain and the United States. In a good many instances these workers have taken their families with them, thus causing such a demand for small flats and houses, that the result has been extreme congestion and insanitation.

It is declared that at least 100,000 new houses are needed in London alone. During the war 1500 houses were condemned as insanitary and should not have been used, but under the circumstances they had to be occupied.

The London County Council has 106 acres on which houses are to be built at once which can accommodate 17,000 persons. It is proposed to spend $17,032,750 on this program. The London Government Board has planned for erecting 300,000 houses, but the procuring of the material required is the great problem. It is estimated that fully 94,000,000 cubic feet of timber, 2,500,000 windows, and 3,000,000 doors are needed for these houses.

American Building Materials for Norway

The first shipment of American house-building materials ever sent direct to Norway has recently gone forward, and a trade that was started with the help of the Bureau of Foreign and Domestic Commerce now promises to develop into one of important dimensions. A self-explanatory letter from the New York representative of the company chiefly concerned in the transaction follows:

"A couple of weeks ago I went to Louisiana and purchased about 120,000 feet of yellow pine in the different dimensions suitable for wooden buildings, which was shipped from New Orleans within a few days direct to Norway. We have since placed an order about half that size, and we now expect that other orders will follow right along.

"We also shipped from New York some 17,000 pounds of American tile and ceramic flooring and some deadening quilt for walls and floors, and have placed orders for high-class and, in part, carved interiors in quartered oak, mahogany, and satinwood, for a certain brand of special-type panels, for ornamental compo ceilings, for plumbing fixtures, water filters, metal roofing, and a number of other building materials for the houses to be erected by a company in Christiania as samples of American building materials and appliances. The company is being organized to carry a stock of such materials at Christiania, Bergen, and Trondhjem."

British to Provide Cottage and Farm Acre for Each Soldier

A bill to be presented at the coming Parliamentary session embodies the scheme of settling former service men on land in large numbers, giving each a cottage and an acre of land, which will be partly garden and fruit growing land. The owner will make the main part of his living by work either in a neighboring town or on the land. It is also desired to have farms on each of which will be a manager, and will be cultivated by men who are not agricultural laborers, although they will get the agricultural wage of the district. They will be partners in the concern and benefit by its progress, getting their share of the surplus profits, as the farm will be cultivated extensively.

To Master Foreign Trade

Courses of study to meet the requirements of those who must learn the practical aspects of the fundamentals of overseas commerce within a short time have been outlined in a bulletin issued by the Federal Board of Vocational Education at Washington. It contains short unit courses in foreign trade technique, on common selling methods and practices, the mechanism of foreign trade, exchange, credit, banking, ocean transportation, marine insurance, trade routes, foreign tariffs, and commercial policies. The bulletin is prepared by Dr. R. S. MacElwee, agent for commercial education in the board.

Preserve Belgian Ruins

Hearty endorsement by the press follows the decision of the Belgian Government to maintain Ypres in its present condition as a permanent war memorial.

"Ypres will be a memorial," says the *Westminster*

Gazette of London, "in which future generations may learn the horrors of war. There is nothing more impressive than the sight of the stricken city with the skeletons of its once wonderful buildings rising gaunt into the sky.

"In a sense there are few things more beautiful. To patch it up would be impossible. Every one, therefore, will welcome the decision that the remains of the old city shall be left intact instead of being cleared away.

"The East abounds in the ruins of the last vestiges of once glorious civilizations which have been overthrown. Ypres will stand for centuries as a reminder that civilization itself cannot be overthrown, and as a monument to a generation sacrificed in its defense."

National Highways Proposed at Convention

The first nation-wide conference called to prepare plans for a system of national highways that will be continuous trunk lines connecting all important parts of the United States was held last week at Kansas City, with every State except Massachusetts represented. Thirty-three organizations were represented by more than three hundred delegates.

The purpose of the convention was to band all the active highway associations of America together into one national organization. With all of the good roads associations unified, it is hoped to induce Congress to pass legislation providing for a complete system of national roads.

Capital in American Railways

Capital invested in American railroads at the end of 1917, when the roads were taken over by the Government, totaled $20,543,389,571, the Interstate Commerce Commission reports. The gross receipts for their operation during the year were $3,596,865,766, while the total expenses of operation were $2,357,398,412, leaving a net railroad operating income, after certain taxes and rentals were subtracted, of $1,081,556.496.

Personal

By the adding of an engineering partner, Frank A. Randall, the old firm of Berlin & Swerm, 19 S. LaSalle Street, Chicago, Ill., has been changed to Berlin, Swerm & Randall. Members of the new firm now are Robert C. Berlin, Perry W. Swerm and Frank A. Randall.

Surplus Government Supplies of Building Materials

Estimates regarding the building materials which the War Department now holds in excess of its present needs have been placed before the Committee of the Chamber of Commerce of the United States of America by Mr. C. W. Hare, the Director of Sales. The Director of Sales expresses a belief from his present knowledge that the War Department's surplus building materials will not cause any serious inconvenience to the building materials trade when it comes to be disposed of. Accuracy in these estimates is not yet possible, but there is reason to believe that the figures presented below cannot contain an error larger than 25 per cent. The estimates are as follows:

Commodity	*Quantity*	
Brick	14,516,000	
Hollow Tile	2,235,403	pcs.
Lumber Ft. B. M. Veneers and Plywood	350,000,000	
Cement	115,523	bbls.
Lime	77,560	bbls.
Flue Linings (Lin. Ft.)	29,226	
Metal Lath (Sq. Ft.)	1,122,313	
Wood Lath	2,695	M
Wall board (All kinds)	5,406,429	
Roofing—Rolls	202,208	
Building Papers—Rolls	52,377	
Nails—Asst. Sizes	159,622	kegs
Reinforcing Steel	3,000	tons
Sewer Pipe—Asst. Sizes (Lin. Ft.)	577,407	
Wood Shingles	908	M

Discuss Disposal of Surplus Building Materials

The uniform plan of procedure for the disposal of Government surplus stocks of building materials, which was approved by the representatives of the several building material industries present at a recent conference, is being rapidly worked out. In the case of lumber a plan will be submitted in final form for approval shortly.

The United States Housing Corporation is now engaged in the liquidation of a large volume of furniture and cafeteria equipment which was purchased for the munition towns which it was engaged in building and which have been discontinued since the armistice. In order to facilitate the disposal of this material it has opened a display wareroom in New York City.

Late News in Architectural Fields

To Be Steady Growth in Building

William B. King, general counsel of the National Association of Builders Exchanges, expresses optimism and confidence and states that "this is a great country which cannot be kept down," and that while there may be no "boom" in building, the outlook is bright "for good steady progress and growth, which is better than any modern 'boom,' which often collapses even more rapidly than it expanded."

A difficult obstacle to resumption of activity in building, he says, is the feeling among investors that war prices must shortly come down. They are wrong in this assumption, he outlines, and must be convinced that prices are not going to be lower for six months or a year. When so convinced he feels sure people will go ahead and build, for there is a great demand for buildings in spite of high prices.

Speaking of the vast power of the United States, the States and municipalities in helping toward the rehabilitation of building industries, Mr. King says that the city, state and nation can better afford to pay 10 to 20 per cent more for a building now than it might cost at a year hence, than they can to have idle workmen.

Brooklyn Architects Hold Monthly Dinner

The Brooklyn Chapter of the American Institute of Architects held its last regular monthly dinner which was largely attended. The main topic of the evening's discussion was city housing conditions. Several speakers deplored the fact that the present tenement house laws in New York State were not elastic enough to permit of improved or advanced construction, which, for instance, would not allow the building of a four-story block of houses with a wide courtyard and flower beds between each house.

It was pointed out that while ordinances and regulations are designed to protect the tenement house dweller, they frequently prevent radical improvements which builders of this type of house are willing to incorporate in the new structures. It was urged that revisions of the tenement house regulations be made so that city housing conditions can be improved.

Robert D. Kohn, of the New York Chapter, spoke on the desirability of the graduate of an institute or school teaching architecture, serving a course of apprenticeship with some architect of wide experience, instead of gaining his experience as is so often the case at the expense of his first clients. The average college, he said, does not turn out a competent graduate. Mr. Kohn spoke of the questionnaire to be sent out to each of the 80,000 architects throughout the country for the purpose of gaining data for formulating reconstruction plans.

Frederick L. Ackerman, formerly supervisor of design of the Emergency Fleet Corporation, gave an interesting talk on how the housing problem for shipyard workers was solved.

Among those who took part in the discussions were: Carroll H. Pratt, president of the Chapter; Alexander McIntosh, secretary; Benjamin Driesler, George Kiese, William A. Parfitt, A. C. Koch, Edward Snook, Frank Quinby and Stephen W. Dodge.

Price Concessions Aid Building Market

A greater volume of building materials moved to actual construction work and more building operations were reported for estimate in New York City last week than at any time in almost two years. This, with lowering prices, has done much to discount the unsettled labor conditions.

The barometer of the present building material market as to inquiries, shipment and production is Portland cement. Inquiries in January were three times as strong as in December, while in December there were twice as many as in November. This healthy tone of the market is strengthened by the opinion of leading operators that 10 per cent more business moved in January this year than in January, 1918, despite the fact that there are now no Government orders that would require shipments. In this section of the country more mills ran in January, 1919, than in January a year ago.

Leading price concessions of the past few days have been in the equipment and supplemental building material lines, which show insulated wire to have declined half a cent, making annunciator base 28½ cents and weatherproof 23 1/3 cent base. Flush and supply pipe manufacturers have been offering concession from 10 to 15 per cent below the recently printed schedule. No drop in lumber is anticipated before summer.

Department of Architectural Engineering

View of the S. E. corner of State Street and Social Hall Avenue, showing a portion of Social Hall at the extreme left. The three-story building on the corner is used on the first floor as a display and sales room, the second floor for the display of used cars and trucks and the third floor as a repair shop. The service room in the rear has a clear span of 50 feet.

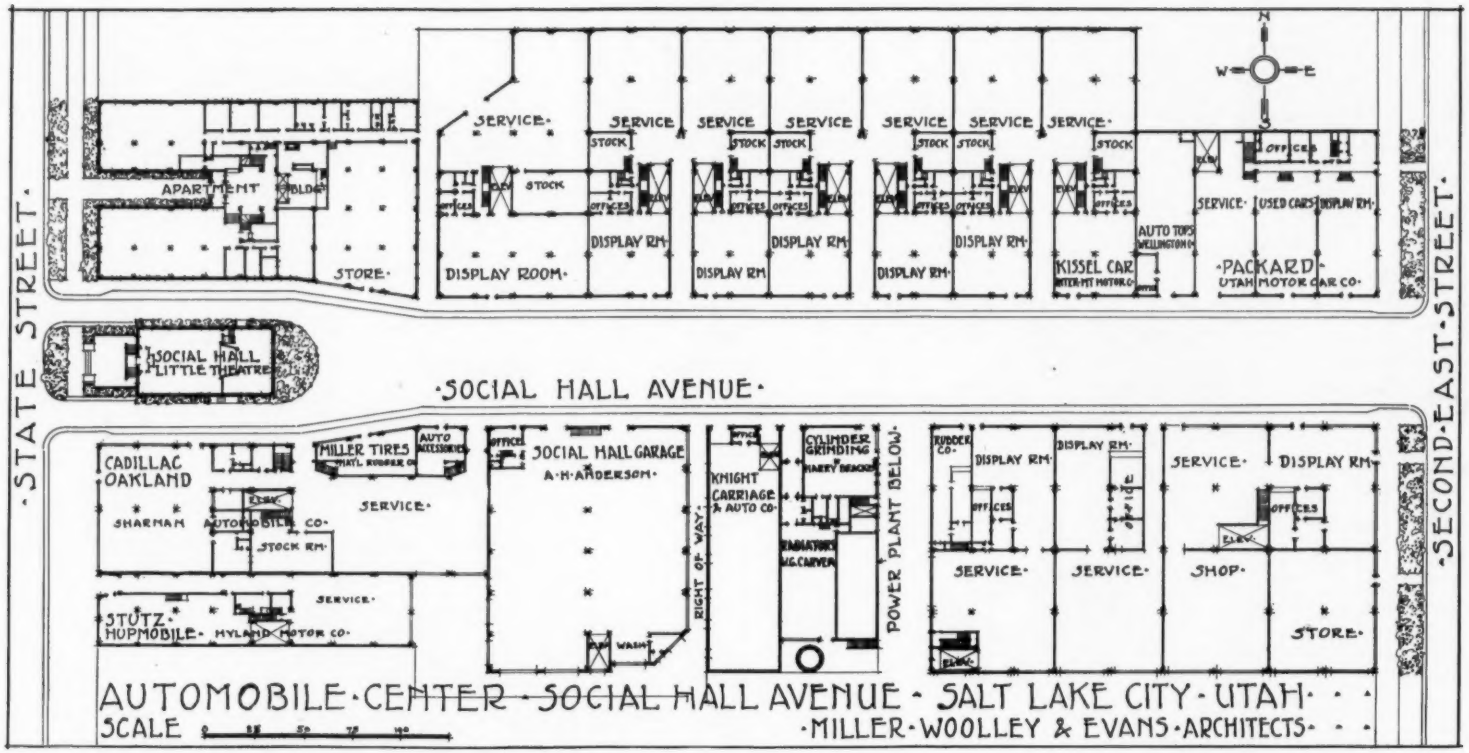
The New Automobile Center, Social Hall Avenue Salt Lake City

By MILLER, WOOLLEY & EVANS, *Architects*

A NEW article, which is produced and used on an extensive scale, requires satisfactory housing and architecture responds quickly to the demand, because a building, when properly planned, is so constructed as to serve a specific purpose. The introduction of the automobile, and the great increase in its use, has been followed by the development of a type of factory, sales and storage buildings. Sales and storage buildings for automobiles have been described in THE AMERICAN ARCHITECT* in which the requirements of individual buildings are discussed and illustrated. These buildings are more or less scattered about a city, although in many cities the tendency to group them in one locality is apparent. The latest development in housing the sales and storage of automobiles *en bloc* is in Salt Lake City. In this case an unusual feature is that the entire development was planned and executed under the supervision of one firm of architects. This resulted in that co-ordination of planning and designing which satisfies the demands in the greatest measure.

The automobile industry in Salt Lake City, up to this time, was housed in cheaply constructed, one-

*See THE AMERICAN ARCHITECT of March 6, 1918, page 305; March 20, 1918, page 361; September 4, 1918, pages 296 and 301.



Block plan of Social Hall Avenue, extending from State to Second East Streets, Salt Lake City. This avenue is 660 ft. long and bisects the block, is 66 ft. wide, except at the west end, where it is 86 ft. wide passing on either side of Social Hall. The street frontage of the building improvements is 1,728 feet. The buildings are supplied with steam heat, hot water and compressed air from the power plant located on the south side of the avenue and in the middle of the block. Several other adjoining buildings are heated from this same plant. The entire project was planned and its construction supervised by one firm of architects. The buildings are used for the sale, storage and repair of automobiles and the sale of accessories.

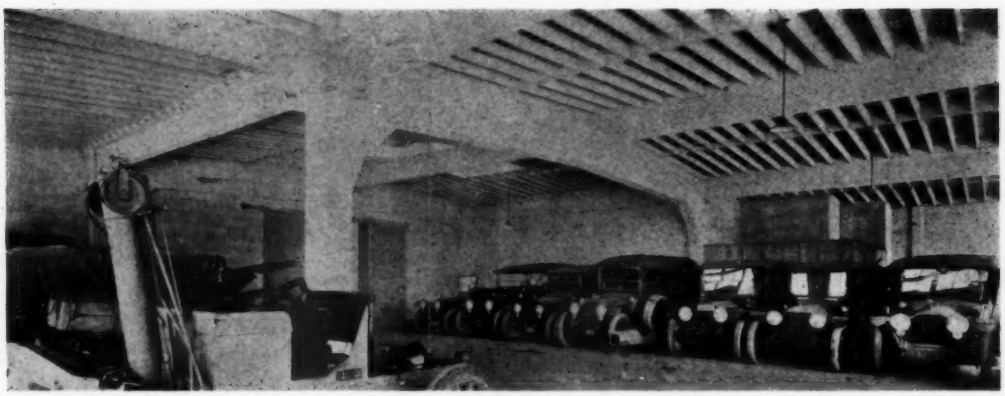
View of the N. W. corner of Second East Street and Social Hall Avenue. The first floor used as a display room, a used car room and service station. The second floor is used as a motor truck room.

story buildings, widely scattered. To concentrate the industry and better house it an important realty and construction project has been successfully concluded.

Salt Lake City is laid out with city blocks 660 ft. square, very wide streets and sidewalks. This plan leaves large areas of unused ground in the center of the blocks, and to make these areas available for use, to some extent, alleys have been cut through. In most instances these alleys have been built up with undesirable structures.

Immediately south of the Public Library, the property adjoining one of these alleys was acquired and a street 66 ft. wide, broadened to 86 ft. at the State Street end, was opened and improved. The name of Social Hall Avenue was given to the street. In the center of this new street, facing State Street, is one of the oldest landmarks of Salt Lake City, "The Social Hall," built by Brigham Young in 1852 as a place of assembly for the Utah Pioneers. This building was used as the first theatre in Utah, balls and banquets were held in the ground floor. Church Councils, political conventions, territorial legislatures and U. S. District Courts have convened in this building. Owing to its historical interest the owners wished to preserve this building, so the

An interior view of the Social Hall Avenue Garage, showing the rigid frame type of reinforced concrete construction.



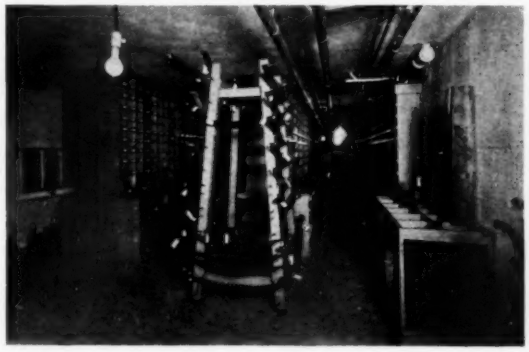
The second floor of the building on the N. W. corner of Second East Street and Social Hall Avenue. This floor is designed for the storage of motor trucks. The construction is of the rigid frame type discussed in the text.

street was widened around it, the building was restored and is now used at a "Little Theatre," endowed by the State University.

In designing the buildings a type of exterior design was adopted and used throughout, the walls being faced with dull glazed buff terra-cotta and a granite base. Panels are provided with electric outlets in each panel for electric signs but there are restrictions as to the placing and size of the signs. Uniform street lighting is provided from brackets on the buildings, thus keeping the avenue free from lamp posts. Being essentially sales, service and work buildings, a large proportion of glass surface is used in the walls, the elevations clearly indicating the uses to which the buildings are put.

Detail of the exterior walls, faced with dull glazed buff terra cotta with ornaments in white.

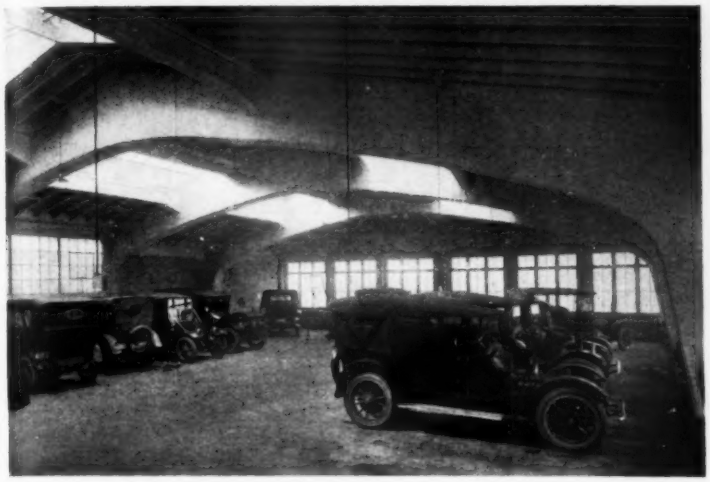
The buildings are planned to suit the individual needs of the occupants and in some cases economy in construction was waived to some extent to accomplish this end. Dividing walls are very largely made of hollow blocks, enabling the floor areas to be modified with a limited cost. The display rooms are designed to give variety and individuality, floors of tile, marble, terrazzo and cement being used. A variety of woods, finishes and decorative treatments were used in these spaces. Office spaces were arranged to suit the occupant, and often on mezzanine floors, from which a good viewpoint can be had of the display room. The buildings are equipped with electric elevators, with platforms 10 x 20 and 10 x 24 ft. in size. They have a capacity of 10,000 lb. each, with 10 hp., three-phase motors, hand rope control, and a car speed of 20 ft. per minute. The openings are protected with automatic gates. Hand and electrically operated dumbwaiters serve the different floors. Shower bath, locker and toilet rooms are provided for the employees.



A stock room for automobile parts and repairs.

All of the buildings have reinforced concrete frames with brick curtain walls. The floor slabs range in size from 20 x 20 ft. to 12 x 18 ft., with thickness, including toppings, of 6¾ in. for the largest panels and 6¼ in. elsewhere. The reinforcement is laid in two directions, and brought up over the beams to provide for the negative moments.

Rigid frame construction was used wherever possible, on account of its economy and appearance. In a reinforced concrete building the entire structure is rigid to a certain extent, but for simplicity in design calculations, advantage usually is not taken of it. Frequently, in both building and bridge construction, the bending moment is taken as an assumed fraction of Wl^2, while the bending moments at the ends and in the columns are disregarded entirely. The effect of this is to make one part too strong at the expense of another.

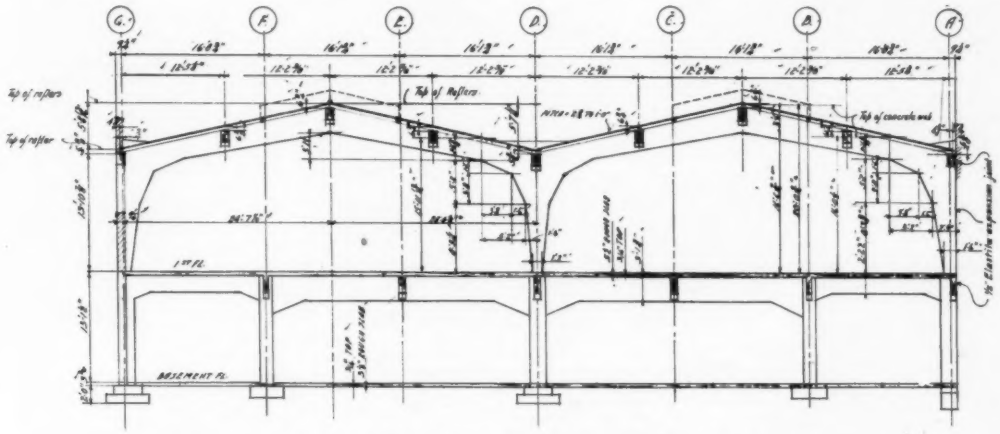


Interior view of the shop on the third floor of the building on the S. E. corner of State Street and Social Hall Avenue.

The rigid frame is, in other words, the exact opposite of the pin-connected frame, and while it is usually safe enough to figure concrete as if it were pin-connected, there are many cases where economy is obtained by taking account of the rigidity and continuity of joints. It is well suited for girder bridges, power houses, machine shops, train sheds, churches, and many other structures or parts of structures. Rigid frames are not, as such, being used in America to a very great extent, while in Europe they form the standard practice. A partial reason for this is found in the fact that many engineers do not believe in continuity, and doubt the effect of rigidity. They do not hesitate to figure on concrete resisting positive bending moments in the span center, nor do they object to using cantilever construction and providing for the resulting negative moments, but they are timid about combining the two.

In the Anderson garage roof, as well as in some other parts of the Social Avenue buildings, full advantage is taken of the rigidity of the frame, and the bending moment at the end of the beam is assumed to be transmitted around the corner into the column. The exact solution of the moments is developed from Castigliano's "theory of least work."

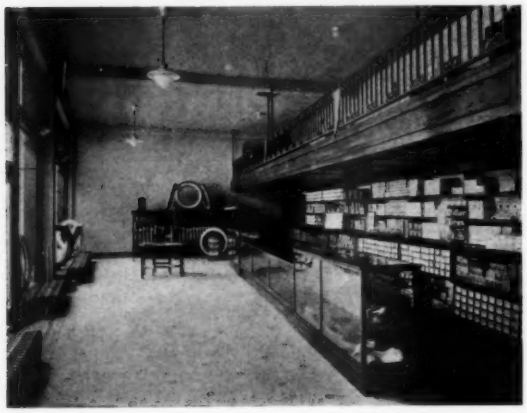
Frequent compression tests were made on 6-in. concrete cubes at the University of Utah, and the results consulted to gauge the safety of the structure under construction loads.



Section through Social Hall Garage, showing the rigid frame construction.

The property has a grade of about 5 per cent from the north to the south, which presented some difficulties in arranging floor levels and other details.

The street improvements were planned by the architect and the city engineer. The cross section of the street shows the sidewalks and the concrete street pavement joining without any abrupt curbs, the storm water draining to the south side of the street



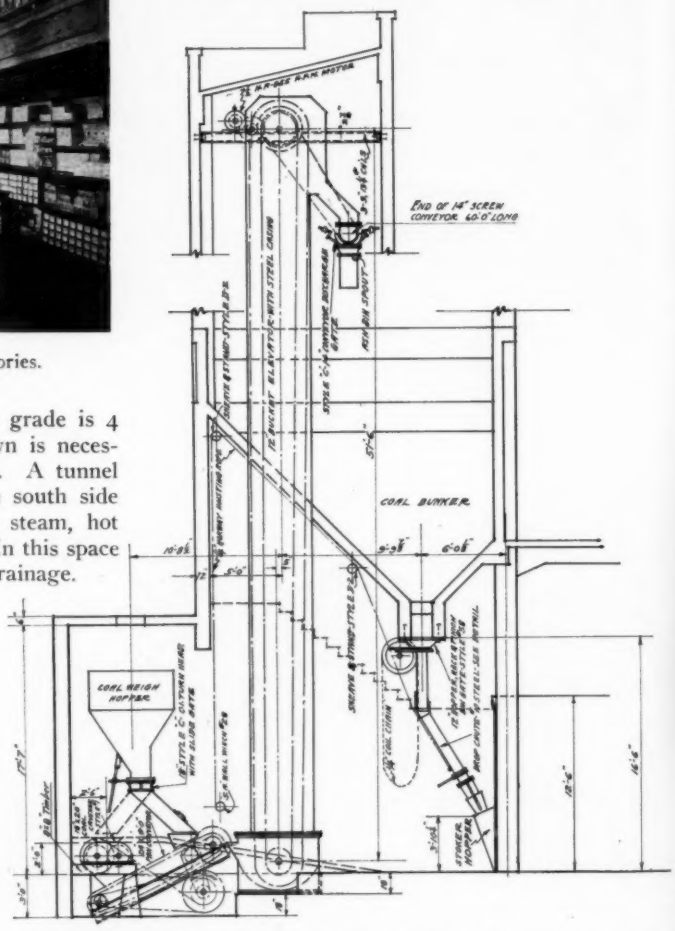
A sales room for automobile accessories.

into a shallow gutter. The transverse grade is 4 per cent, and the absence of any crown is necessary to permit of the drainage scheme. A tunnel is provided under the sidewalk on the south side of the street, in which is placed the steam, hot water, compressed air and gas mains. In this space is also placed the plumbing pipes and drainage.

All of these buildings, as well as the Public Library, University and Alta Clubs, Elks Building, City Public Safety Building and two apartment houses, are heated from a central power station located in the center of the block and south of the avenue. This plant is so constructed that it can, at some future time, be operated as a unit of the municipal heating plant.

This plant, which for the present will be used for heating only, is equipped with six 150-hp. boilers operated at 70 lb. pressure, which is reduced before entering the heating mains. The boilers are equipped with underfeed steam-driven stokers. The reinforced concrete stack is 6 ft. 6 in. inside diameter and 155 ft. high above the boiler-room floor. This stack was built in cold weather, and a frost casing was carried up as a part of the scaffolding, in which kerosene jet burners were used to prevent the freezing of the concrete.

The coal is received in a 5-ton automatic scale with a 6 x 11-ft. hopper. A steel pan conveyor acts as a feeder from the weighing hopper to a 12-in. bucket elevator. By means of a turn-head spout on the weighing hopper coal may be diverted through a coal crusher, which reduces lump coal to proper size when slack coal is not available. The coal is elevated by a 12-in. bucket elevator through a height

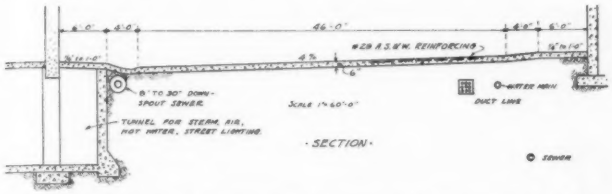


Section through the coal handling plant, showing the weighing hopper with turn-head spout delivering either to a coal crusher or to the elevator boot direct. The 12-in. bucket elevator conveys the coal to a head 52 ft. above the boot and delivers the coal to a 14-in. screw conveyor, 60 ft. long, over the coal bunkers and ash bin. From the reinforced concrete bunkers the coal is spouted to the stoker hoppers.

of 52 ft., delivering into a 14-in. screw conveyor 60 ft. long over coal bunkers and ash bin. By this arrangement the ashes are handled and deposited into the ash bin by the coal-handling machinery. About 30 tons of coal per hour can be handled. The bunkers are of reinforced concrete, with a capacity

of 400 tons. The coal is spouted from the hopper bottoms of the bunkers to the automatic stokers.

The heating mains are carried through the tunnel, the pipes resting on ball-bearing brackets. They supply the cast-iron radiators in the buildings, which



Cross section through Social Hall Avenue, looking west. Note the 4 per cent pitch in the section due to the pitch of the ground from north to south, directing the surface water to the shallow gutter on the south side. There are no curbs or crown in this street.

discharge the condensation through a trap, and each tenant has a condensation meter. From the meters the condensation returns by gravity through a common return main to the vacuum pumps and thence to the steam-driven boiler feed pumps. All boiler-room heating equipment is in duplicate to permit of repairs without closing down the plant.

Hot water is supplied from the boiler plant for the entire block. It is heated by steam passing

Display room in the building on the S. E. corner of State Street and Social Hall Avenue.

through a feed-water heater, and goes into a 1000-gal. tank. All of the hot water is under city pressure, and its circulation is boosted by a slow-acting reciprocating pump. A large amount of hot water is required to temper the water used for washing automobiles, and special hot and cold water connections are made at each wash rack for this purpose.

Compressed air at 150 lb. pressure is supplied for the whole block by a single stage air compressor rated at 182 cu. ft. free air per minute, driven by a 30-hp. induction motor. It is also piped through the tunnel and is used for inflating tires, cleaning cars, blowing soldering furnaces, and driving small repair-shop machines.

A project of this kind presents several interesting aspects. To the architects it presented an opportunity to design and construct buildings for one specific use having a frontage of one-third of a mile, and which included one central mechanical plant for providing the heat, compressed air and hot water. It also offered as equally attractive and interesting a problem to the contractors, Villadsen Brothers, Inc., who solved problems of equipment and procedure in a highly satisfactory manner, and all carried on with close co-operation with the architects. To the owners it was a project involving the segregation of an industry with specially prepared housing and facilities. The project is also worthy of consideration from the viewpoint of rehabilitating old and dilapidated sections of cities and increasing property values. There is scarcely a city in this country that does not have such neighborhoods that could be remade for this or some other industry. The success of this particular project demonstrates that a broad-gauge consideration of its possibilities is well worth careful study.

Research Graduate Assistantships

To assist in the conduct of engineering research and to extend and strengthen the field of its graduate work in engineering, the University of Illinois maintains fourteen Research Graduate Assistantships in the Engineering Experiment Station. Two other such assistantships have been established under the patronage of the Illinois Gas Association. These assistantships, for each of which there is an annual stipend of $500 and freedom from all fees except the matriculation and diploma fees, are open to graduates of approved American and foreign universities and technical schools who are prepared to undertake graduate study in engineering, physics, or applied chemistry.

An appointment to the position of Research Graduate Assistant is made and must be accepted for two consecutive collegiate years, at the expiration of which period, if all requirements have been met, the degree of Master of Science will be conferred.

Nominations to these positions, accompanied by assignments to special departments of the Engineering Experiment Station, are made from applications received by the Director of the Station each year not later than the first day of March. Preference is given those applicants who have had some practical engineering experience following the completion of their undergraduate work. Appointments are made in the spring, and they become effective the first day of the following September.

Research work and graduate study may be undertaken in architecture, architectural engineering, ceramic engineering, chemistry, civil engineering, electrical engineering, mechanical engineering, mining engineering, municipal and sanitary engineering, physics, railway engneering, and theoretical and applied mechanics.

Additional information may be obtained by addressing

THE DIRECTOR,
Engineering Experiment Station,
University of Illinois,
Urbana, Illinois.

Zoning the Billboard in New York*

By HERBERT S. SWAN, *Secretary, Zoning Committee, New York*

PRIOR to the adoption of the zoning resolution there existed in New York absolutely no safeguards to protect residential districts against billboards. Advertisers were free to erect huge signs wherever they wished—whether the site chosen was opposite a church or a warehouse, a park or a railroad yard, a home or a gas house. No locality had any amenities which the billboard was bound to respect—it could go anywhere. A private dwelling had no more rights in a residential district than fences featuring Ziegfeld's Follies, Haig & Haig or Bull Durham.

All this has been changed by the zoning resolution which prohibits property situated in residential districts from being put to any but the following uses and the accessory uses customarily incident to these uses:

1. Dwellings, including dwellings for one or more families, boarding houses, and hotels having thirty or more sleeping rooms.
2. Clubs, excepting clubs the chief activity of which is a service customarily carried on as a business.
3. Churches.
4. Schools, libraries or public museums.
5. Philanthropic or eleemosynary uses or institutions, other than correctional institutions.
6. Hospitals and sanitariums.
7. Railroad passenger stations.
8. Farming, truck gardening, nurseries or greenhouses.

The term "accessory use" does not include any building or use not located on the same lot with the building or use to which it is accessory. A private garage for more than five motor vehicles is not deemed an accessory use. Presumably the only kind of signboard constituting an accessory use is the ordinary "to let" or "for sale" sign affecting the premises on which it is located.

Commercial advertising can in no sense be deemed accessory to any of the uses specifically permitted in residential districts. The erection of signs in the future will therefore be confined to such sections of the city as are situated in business districts or unrestricted districts.

The city's determination to enforce this provision of the zoning resolution has been demonstrated in several instances by the revocation of permits mistakenly issued for the erection of billboards in residence districts.

*Copyright 1919, by Herbert S. Swan.

The zoning law, it must be remembered, is not retroactive in any of its provisions. Uses not conforming to the restrictions imposed on the districts in which they are situated are allowed to continue, provided they existed in the district previous to July 25, 1916, the day the law was passed. Hurtful or harmful uses, which have invaded residential neighborhoods since that date, unless authorized by the Board of Appeals after a public hearing at which all property owners immediately affected by the proposed use were notified to appear and have their objections heard, are in the nature of violations.

The zoning resolution has at one stroke done more to remedy the billboard evil in the residence districts of the city than all the laws and ordinances previously passed on this subject put together. Instead of merely regulating the height, size and construction of signs, it frankly recognizes the fact that there is no such thing as a billboard respectable enough to rub elbows with churches, schools and private homes. When hereafter erected the billboard must go where it will cause a minimum of harm—alongside business buildings and industrial establishments.

Important Test Data on Flat Slate Construction

Bulletin 106 of the Engineering Experiment Station of the University of Illinois gives the results of tests on a four-way reinforced concrete flat slab floor of the Western Newspaper Union Building in Chicago, Illinois, just before it was razed in 1917 to secure space for the present Union Passenger Station.

The floor construction used in the first five floors of the building was slab and girder type while that of the upper three floors was Turner mush-room flat slab type with four-way reinforcement. The tests were made on the sixth floor. A test load of 913 lbs. per square foot. was applied over four panels each 17 ft., 5½ in. by 19 ft., 4½ in. This load was considerably greater in proportion to the design load than had ever been used in previous tests of buildings. The information secured, therefore, which shows the action of the slab in its various parts given by the strain measurements has an important bearing on the design of the flat slab structure. The text of Bulletin 106 is adequately illustrated by means of photographs and diagrams.

Copies of Bulletin 106 may be had gratis by addressing the Engineering Experiment Station, University of Illinois, Urbana, Illinois.

Industrial Information

In this Department there is published each week information as to the development of materials and methods derived from reliable sources.

Lengthening the Building Season

That winter weather need not preclude the possibility of successful construction is a truth bearing in its wake many advantages which every observer will appreciate. By exercising certain comparatively simple precautions, building can be carried forward during months when labor is more available, and during which transportation congestion may be lessened by distributing over the year work heretofore necessarily confined to a short period.

The North Western Expanded Metal Co., 37 West Van Buren Street, Chicago, sends forth a monthly publication issued in the interest of better buildings. It will be sent without cost to those interested in good design and construction. In the January number of this publication may be found an account of how an important concrete structure was erected in northern Michigan during zero weather.

Concrete is so important a medium for the construction of the modern building that it may be time well spent to give quite fully the experiences which made it possible to evolve a successful method for proceeding with its outdoor use under adverse weather conditions.

In answer to the natural query, what precautions were taken to make cold weather concreting safe, we are told merely some hot water for surface thawing and well warmed concrete.

The frost-fighting apparatus used was simple even to elemental—two small steam boilers to supply coils to the water tank and material bins. A tower 135 feet high and chutes with a maximum run of perhaps 200 feet distributed the concrete.

The work was left exposed over night to the elements. But before beginning operations in the morning the top "skin" of ice and laitance—sometimes nearly 2 inches deep—was thawed out by running hot water over the surface and letting it stand a few minutes—the necessary water pressure being obtained from a small feed pump connected to the hot water tank. The fresh, warm concrete heated to a temperature of about 50° was then placed and the warm mass completely finished thawing out the frozen layer so that a good bond resulted.

When the spring thawing was complete it was found that only on the work placed during the very coldest weather was there any evidence of scaling and this only in occasional spots and to a depth not exceeding ⅛ inch, and in July absolutely no signs of leaks have been found.

It is a recognized fact that warmth and moisture hasten, while cold retards the hardening of concrete. If therefore the mixing water and aggregates are heated and due precautions taken to protect the working during the first 48 hours there is apparently little danger of ill after-effects.

On large jobs the water is usually heated by steam, and since a boiler pressure of 25 pounds suffices, it is often possible to use an old steam boiler that is no longer safe for high pressure. Heating the water alone is insufficient. The aggregates must also be warmed and the necessary heat may be obtained by piling them over and around a "stove" frequently made from sheet iron cylinders or an old smoke stack, etc., or from steam heated pipe coils. Care, however, should be used to keep the materials separate (otherwise there is liability of the "batch" being incorrectly proportioned) and to turn them frequently that they may not become so hot as to impair the strength of the concrete. By further covering the work with tarpaulins and using open fire pots or salamanders in the interior the hardening process will be facilitated and greater comfort for the workmen assured. It is not necessary to add that the sand and broken stone to be used later should be kept indoors if possible and carefully covered. The steel reinforcing should also preferably be warmed.

Salt, which was at first commonly used in cold weather concreting, is now considered undesirable, since no more than 10 per cent can be used without danger of affecting the final strength of the concrete, which amount is insufficient to afford protection. Furthermore it tends to corrode the reinforcing steel and even spoils the appearance of the finished work by causing the whitish deposit called "efflorescence" to appear later.

It is highly important that sufficient time be allowed for the concrete thoroughly to harden before forms are removed. To determine whether the work has hardened or is simply frozen, pour hot water on the concrete or turn the flame of a plumber's blow torch on it under which it will quickly soften if merely frozen.

The additional cost should not exceed 10 per cent and may even be as low as only 6 per cent above that of summer concreting—a difference more than offset by the advantages of having the building ready for use at the beginning instead of at the end of the season.

This whole subject is one of particular suggestive value to architects, and may serve as a point of departure for very efficient and expeditious work in the winter months.

Todhunter Mantels

In the large reception room or the many other places where wall space is not at a premium, a mantelpiece will lend more of dignity, stateliness and atmosphere, perhaps, than any other one feature of design.

Many beautifully executed reproductions of Colonial and early English mantels, together with appropriate fireplace accessories, have been created by Arthur Todhunter, craftsman, who maintains showrooms at 101 Park Avenue, New York. These mantels are made in both wood and marble, with consummate care and artistic ability.

Among the numerous illustrations submitted in the unusually attractive literature which Mr. Todhunter has prepared for circulation, replicas are presented which one feels instinctively to correspond exactly with their 18th century prototypes.

One commendable reproduction is that of a Jacobean oak panelled room whose mantelpiece, ornamented with rich carving and inlaid panels, is of exceptional interest.

Reproductions of old English and Colonial wrought-iron work, fireplace furnishings, and distinctive metal work of the most varied and attractive kind are another feature of this man's activity. Architects are invited to watch his blacksmiths at their forges at 326 East Thirty-eighth Street, New York, where these things first are made.

Mr. Todhunter appears to be fully equipped to render service of the desired character. He maintains a London office constantly co-operating in revealing rare pieces and getting them over here, where skilled artisans may reproduce them. There is also a drafting department to co-operate with the architect who desires to avail himself of this opportunity.

An Expansion Joint

For construction work where it is necessary to provide for expansion of materials, The Philip Carey Co., Lockland, Cincinnati, Ohio, have placed on the market what they call the Elastite Expansion Joint. This consists of a heavy body of special asphalt compound sandwiched between two layers of a high grade of asphalt-saturated wool felt, the whole being firmly bonded together by an improved process. This results in several special advantages. It insures full depth of joints. The compound is evenly distributed from top to bottom and from end to end of the joint, so its uniform thickness as well as its high melting point make it respond readily to expansion without damage. It requires no investment for equipment. The expenditure is for the joint itself. It is easy to place, and therefore reduces labor cost. No waste occurs in application.

The makers claim Elastite does away with all danger of imperfect joints and prevents a faulty job either from carelessness of installation or other causes. The Philip Carey Co. manufactures a large variety of important building materials. They may be addressed for further information on Elastite at branches in the chief cities in America.

The Science of Illumination

Most people really know very little about good light. Illumination is a science, and as yet we have not been educated to understand this fact and act upon it.

This important matter of illumination has been left to manufacturers of chandeliers—successors to gas fixture makers—who depend upon design of fixtures instead of quality of light. They have largely failed to keep pace with the development of the lighting unit from gas and the first carbon filament electric lamps to the modern incandescent lighting unit of a thousand times the brilliancy.

The two standards by which the average person judges lighting are brilliancy of illumination or beauty of fixtures. These two false standards are the basis of the condition which now confronts us—the alarming increase in the wearing of glasses and the prevalence of headaches, 60 per cent of which specialists say are due to poor light. *There* is the big cause—wrong illumination. When people know that the only real standard for judging light is its effect upon the eyes, then we will have *right illumination*. When they understand that the eye is an exceedingly delicate organ, that its nerves are so sensitive that even a small amount of excessive light will injure them or a few hours of work under inadequate light do great damage, all illumination will be based primarily upon the eye and its needs.—*National X-Ray Reflector Co., 235 West Jackson Boulevard.*